

OVERSEAS NEWS

Shell to rejoin search for oil off India

BY JOHN ELLIOTT IN NEW DELHI

THE ROYAL DUTCH SHELL group is re-enters India after an absence of more than 10 years to explore for oil off the shores of Kerala and Karnataka states in the south-west. It signed a contract in New Delhi on Saturday and is the fourth international company to join India's third round of offshore exploration...

Junejo 'planned to curb Zia's power'

BY CHRISTINA LAMB AND MOHAMMAD AFTAB IN ISLAMABAD

SERIOUS DIFFERENCES on economic policy, and the discovery of a plan under which Mr Muhammad Khan Junejo, the Pakistan Prime Minister, would have stripped President Zia of his post of army chief of staff...

LATE PRESIDENT'S SON IS REGIME'S MOST SERIOUS CHALLENGE SINCE 1940

Mexican left unites under Cardenas

BY DAVID GARDNER IN MEXICO CITY

FOR THE FIRST TIME in its history Mexico's political left has formed a united front to take on the regime in presidential elections on July 6: the Mexican Socialist Party has joined forces with the swelling left-wing nationalist current led by Mr Cuauhtemoc Cardenas.

segments of Mexican society that it is at last possible to challenge the hegemony of the PRI, which they believe incapable of reform. The is what has sucked in the fractured independent left behind Mr Cardenas, in what may now have a multiplying effect on his support.

Venezuela's national oil company may face extortion probe

BY JOSEPH MANN IN CARACAS

VENEZUELA'S national oil company, Petroleos de Venezuela SA (PDVSA), should be investigated for alleged cases of extortion, according to the main political opposition group, the Social Christian Copei Party.

Caracas signs joint deal to build \$586m coalmine

BY OUR CARACAS CORRESPONDENT

THE VENEZUELA Government and two international coal companies, Agipcoal and Arcocoal, have signed an agreement finalising a joint venture to develop a \$586m coalmine in western Venezuela.

Delhi to begin Jaffna withdrawal

By Mervyn de Silva in Colombo

INDIA WILL withdraw some troops and armour from Sri Lanka this week. It will be the first reduction since an Indian peace-keeping force was dispatched to Sri Lanka as part of the deal signed last July by President Junius Jayawardene of Sri Lanka and Mr Rajiv Gandhi, India's Prime Minister, in an attempt to end years of ethnic conflict on the island.

US and Japanese builders link

BY RODERICK ORAM IN NEW YORK

TURNER and Kumagai Gumi, leading construction companies in the US and Japan respectively, have agreed to pursue joint projects so that they can benefit from each other's home base advantage.

Kansallis Banking Group

Looking for specialist market niches

By Victor Thorne, Helsinki

When the Kansallis Banking Group talks about offering the entire spectrum of banking, from retail to merchant, commercial and investment, it is not a conservative form of sensationalism. In Finland, as in West Germany and Switzerland, offering a comprehensive service is the only way to do business in the banking world.

of the reorganisation was Dr Jaakko Lassila, Chief General Manager of Kansallis and a man noted for his advocacy of barrier-free competition.

Nowadays, following the deregulation, such Finnish private banks as Kansallis are able to offer those selfsame facilities overseas - though the retail sector is generally unlikely to play a part. And they are venturing into these universal banks is high and they are eager to expand their business.

"We responded to the new challenges of the market in the first instance by changing our organisation," is how he puts it. "Deregulation had improved our profits, in that we could price our own products ourselves. That meant we had less interest rate risks than before. But we had to be geared up to make full use of the prospects."

When the Government of Finland took the fetters off the country's private banks in 1987, it opened up a way for across-the-board banking in the fullest commercial sense.

While the high street banking side remains an important source of funds, greater emphasis has been placed on corporate, international and investment banking specialist functions for underwriting operations and to manage the bank's own equity and bond portfolios.

One of the 64 public issues by Finnish companies last year, the investment banking side of Kansallis managed 34. In 1987, too, there were 23 issues of bonds with equity warrants in the domestic market, eight of them, valued at FIM 1.1 billion, lead managed by the bank.

"We aim to keep our triple-A status"

Deregulation created a short-term money market that had not previously existed. Additionally, with the market's having gained in strength in recent years, coupled with Finnish companies' overseas borrowing, the Bank of Finland's foreign exchange reserves have swelled to an all-time record high.

It has been the same story in New York, where business has exceeded the bank's expectations. And while the Singapore enterprise has not recorded quite the same growth, it is a profitable concern - a characteristic shared by Kansallis International Bank S.A. in Luxembourg.

Table with 2 columns: Financial metrics and values for Kansallis Banking Group. Includes Head Office, Shareholders (200,597), Total consolidated shareholders' equity (\$610 million), Total consolidated funding from the public (\$6085 million), Consolidated operating profit (£151 million).

As a vital part of its activities, electronic data processing (EDP) has its own department in Helsinki, staffed by some 600 people. It is an area in which Finnish banks are well in advance of most, with a welter of the normal over-the-counter transactions being conducted electronically.

Kansallis has been using a sophisticated EDP system for a decade now, and is just installing second-generation mainframe computers and networking to cope with increasing and more varied demands on its services.



Jaakko Lassila at the telling-point: EDP at work

As Finland's more go-ahead industrial enterprises internationalised, the pressure on banks like Kansallis to offer wholesale banking facilities abroad grew in proportion. But that type of business would not have been sufficient foundation for profitable operations. The client base had to be broadened, and Kansallis found the need to boost its foreign exchange operations, to play the money market.

The bank acquired a 20-year lease on Whitlington House in the City of London, with enough space for a staff of sixty. At the time, it seemed adequate enough. Today, with Kansallis active in the syndicated loans market and taking a lead management role in many financing schemes for UK companies, the staff has grown to 136 and Kansallis has had to take on a second office building, in nearby Bishopsgate.

It has been the same story in New York, where business has exceeded the bank's expectations. And while the Singapore enterprise has not recorded quite the same growth, it is a profitable concern - a characteristic shared by Kansallis International Bank S.A. in Luxembourg.

Then there is that pearl among pearls, the Kansallis Banking Group's Zurich operation - the comparatively small but mightily sound Nordfinanz Bank, which last year enjoyed especial success in investment services and securities trading.

But there is a con comitant risk in the expansion of foreign business. Given that banks in

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Industrial relations professor commends single-union pacts

BY OUR LABOUR STAFF

THE trade union movement is likely to be weakened unless a majority of members can be persuaded of the need for single-union agreements instead of traditional "adversarial patterns," an international report states today.

In a study on new labour-management relations, Professor Ben Roberts of the Department of Industrial Relations at the London School of Economics warns that British unions face an ever-growing threat that employers, under pressure from technological, market, and social changes, might bypass union officials and deal directly with employees.

"If the unions fail to put their house in order, employers, whose support is vital to union survival, will increasingly show less respect for their interests," Professor Roberts says.

The study argues that industrial relations are undergoing a

"positive change" that was unlikely to be completely reversed, although in the public sector "resistance to change, mutual distrust, and bitterness" seemed to be more evident.

Professor Roberts appears to be strongly supportive of unions such as the IETPU electricians union.

He says the IETPU is "going far beyond a pragmatic response" to industrial relations by signing "Japanese-style" workplace agreements.

He says the union is "advancing a philosophy of trade unionism based on providing a service to its members in terms of their individual needs rather than on acting as a collective bargaining agent in a system of conflict between unions and employers and the state."

The study suggests that in the Public Sector, the extension of privatisation and decentralisa-

tion in administration may pave the way for similar radical changes in industrial relations.

Meanwhile, in another paper on industrial relations, Professor Thomas Kochan of the Massachusetts Institute of Technology, argues that in the U.S. the introduction of flexible work systems have been most successful in new or "green field" sites where such concepts are "built into the design of the organisation and labour-management system from the start."

By contrast in existing plants many changes in work rules have also been introduced "through hard negotiations, sometimes involving a strike."

Departures in Industrial Relations: Developments in the US, UK, and Canada. Occasional Paper No 5, British-North American Research Association, 35-37 Grosvenor Gardens, London SW1W 0BS (Price £4)

Guardian to launch European edition

By Lynton McLain and Alain Cass

THE GUARDIAN newspaper is planning to launch a daily European edition next Monday for distribution in France, Italy and Spain.

Initially, the proposed paper would be a "teach edition" aimed at southern European reports. It would be the first seasonal daily paper to be produced by a UK national newspaper group.

Mr Jim Markwick, The Guardian's managing director, confirmed yesterday that the newspaper was experimenting with print runs in Europe this week.

"The Guardian is looking at the European situation and experimenting on looking at a European edition," said Mr Markwick. "A European edition of The Guardian could be seasonal, or not. The current experiments are all part of the process of seeking answers."

The Guardian already prints a weekly edition of the main UK newspaper in Canada.

A special 24-page edition of the newspaper will be faxed from its offices in London and printed at Vitrolles near Marseilles in southern France.

The edition will be printed by Ricobone, which also prints French newspapers. It will have an initial print run of 10,000 copies, of which about 2,500 will be distributed in France by NMPP, the co-operative of French newspaper distributors.

The Guardian is also understood to be discussing the possibility of printing in northern France, near Lille.

The Financial Times was the first UK national newspaper to publish an international edition, printing initially in Frankfurt, then also in New York, with France added this year.

The management of The Guardian is meeting to discuss results of the experiments later this week and to take a final decision on the project.

Mr Peter Preston, chairman and editor of The Guardian said yesterday in response to a suggestion that the paper would be printing in Europe that the position was "more laid back than that."

The circulation of The Guardian has dropped since its re-design earlier this year. Over the past 18 months it has fallen from over 500,000 to less than 450,000 partly as a result of the challenge posed by the Independent in the attempt to produce a European edition could be one way of increasing circulation.

The project has been hatched in conditions of absolute secrecy over the past six months, although the idea of a European edition of The Guardian was first mooted in 1980. However, NMPP were told of the plans only two weeks ago, according to a French executive of the distributors. The Guardian had wanted to start printing today.

There is some scepticism among French newspaper distributors about the circulation targets The Guardian appears to have set itself in Europe. "It will certainly be tough to sell," said one executive in Paris.

CBI calls for new equal pay laws

BY PHILIP BASSETT, LABOUR EDITOR

THE GOVERNMENT must amend current equal pay legislation following a recent House of Lords judgment supporting the principle of equal pay for work of equal value, the Confederation of British Industry says today.

The CBI's call for Government action on the issue of equal pay for equal value is the most candid employer response so far to last month's Law Lords' judgment upholding a claim by Miss Julie Hayward, a shipyard cook, for higher pay to give her parity with male employees doing different work.

Describing the Lords' decision as "fundamentally flawed", the CBI says it is not surprising that at early stages of the case, lower-level courts said supporting the

claim would do "grave damage" to industry.

In its latest Employment Affairs Report, the CBI says that the Lords' decision is a "clear invitation" to parliament to consider whether the terms of the equal value legislation, introduced against the Government's wishes after a European Court decision, should now be amended.

The CBI says: "It is now up to the Government to amend the Equal Pay Act to restore common sense to the concept of equal pay."

Arguing that the effect of the Hayward case threatens bouts of pay leaptrogging, the employers' body says there is nothing in European law which supports employees bringing leaptrogging

claims on the grounds of equal value.

It says that "as it stands, the effects of UK law are to defy common sense, to increase employment costs far beyond the requirements of equity and therefore to put jobs at risk. The law is fundamentally flawed and must be changed."

Mr Rod Thomas, the CBI's director of employment affairs, says today that in the wake of the Hayward case, the law now "operates arbitrarily by allowing unintended pay rises only to those employees lucky enough to have a different benefits package from a group of employees of the opposite sex engaged on work of equal value."

Even though it was not before the Lords as a substantive issue,

the CBI says that the effect of the Lords' decision is to make uncertain the available defence to employers under the law against an equal value claim that a pay variation is due to a material factor other than sex.

In response to the CBI's call, the Department of Employment said it was examining the legal implications of the Hayward judgment.

Mr John Edmonds, general secretary of the GMB union, which helped Miss Hayward bring her case, said the Lords' judgment would come to be regarded as "one of the great milestones of women's emancipation." He said of the CBI's call that it was hard to understand it, "except as an escape from employers' obligations to women's equal pay."

UK unions collect less from members

BY JIMMY BURNS, LABOUR STAFF

BRITISH trade unionists pay a smaller proportion of their earnings to their trade unions than their counterparts in West Germany, Italy, and France according to a survey published today by the Labour Research Department, a UK-based trade union research organisation.

The survey suggests that in "broad terms" UK union contributions are about half the level of those in West Germany and "somewhere around" two-thirds of the level in France and Italy.

According to the LRD, the disparity is largely accounted for by the major differences that exist in trade union structure and tradition which have a direct bearing on union finances within the four countries.

In the UK, the majority of unions have a single fixed contribution for full-time adult workers, with a lower rate for part-timers and younger workers.

The only British union with more than 100,000 members to link contributions to earnings is Nalco, the white collar union, which has 16 contribution bands that vary according to salary.

By contrast in West Germany, France, and Italy, union contributions are almost invariably linked to pay, and frequently on a percentage basis.

In West Germany, eight of the

14 unions with more than 100,000 members operate a straight percentage system with members' paying a fixed proportion of their gross pay in trade union contributions.

Ten of the 14 West German unions collect 1 per cent or more of their members' earnings as contributions. In Italy and France, the main trade union confederations collect between 0.5 per cent and just over 1 per cent.

However in the majority of UK unions with more than 100,000 contributions are equivalent to between 0.4 per cent and 0.6 per cent of earnings. The exceptions are the NGA print union and the National Union of Mineworkers with 0.9 per cent.

In trying to establish which trade unions get more value for money, the LRD report compares only the UK and West Germany, the two countries with broadly similar union structures.

The survey concludes that "West German unions certainly collect more than their UK opposite numbers."

In 1986, the second largest West German union, the Public Services Transport and Traffic Union, collected an income from membership contributions of £91m. This compares with £49m collected by Britain's biggest

union the TGWU transport, despite the fact that the TGWU has 300,000 more members.

The greater financial strength of the West German unions is reflected in much higher levels of expenditure in services such as publications and training courses.

For example West Germany's biggest union IGM, with 2.8m members, distributes 2.3m copies of 'Metal', its fortnightly newspaper, in addition to 180,000 copies of a monthly magazine for activists. The TGWU, with 1.2m members, distributes 350,000 copies of 'The Record', its monthly paper, although it also has three specialist journals with a combined circulation of 140,000.

West Germany's railway workers' union has two education centres for its 340,000 members, while the country's postal workers union has 20,000 of its 483,000 members go on three day trade union courses annually.

By contrast Britain's Union of Communication Workers (UCW), which "runs a substantial education programme in UK terms" puts 2,200 of its 192,000 members on similar training courses annually.

● *Europe's unions - what do members pay? Labour Research June 1988. Price £1.40p (By subscription), 78 Blackfriars Road, London SE1 8HF*

Specialised satellite service licences attract wide interest

BY HUGO DIXON AND TERRY DODSWORTH

ABOUT 30 bodies including the Stock Exchange and businesses run by Mr Robert Maxwell and Mr Rupert Murdoch, are expected to apply this week for six new licences to operate specialised satellite services in the UK.

The licences, to be awarded this summer, are being granted as part of the Government's policy of liberalising the telecommunications market.

They will allow operating companies to provide facilities for sending one-way traffic to specialist audiences - currently a British Telecom and Mercury duopoly.

Interest in the new satellite system appears to have been much heavier than the Department of Trade and Industry expected when it decided on further liberalisation.

At that time the Government imposed tight limits on the licences in accordance with its commitment to maintain the BT-Mercurey telecommunications duopoly until 1990. As a result, the new operating companies will be able to transmit only within the UK and on a one-way basis, beaming messages to a satellite from a central point and back to small satellite dishes.

In spite of these limitations, potential operators foresee opportunities for distributing voice, data and visual signals to specialist audiences where there is no need for a reply. The applicants

matter, has more ideas up its sleeve. The present service collects television signals from racecourses and sends them to bettors.

● The Stock Exchange and Reuters, which want to transmit financial data using satellites in addition to their present cable-based systems, because satellites can transmit more data more quickly.

● Thorn EMI and Maxwell Satellite Communications are more interested in using the licences to provide retailers with one-way video conferencing facilities, helping shop managers keep in touch with new product launches.

● EDS, the US data communications specialist owned by General Motors, has plans for a number of applications modelled on experience in the US, where GM, for example, uses satellites to keep in touch with its dealer organisation.

● British Satellite Broadcasting, which plans to launch its first satellite to broadcast new television channels, is interested in leasing circuits to third parties.

● The BBC is considering applying for a satellite licence to complement its terrestrial specialist broadcasting services - Datacast and Downloading.

● SIS, a UK company already running a one-way satellite system using British Telecom trans-

mission shops.

Other organisations involved in discussions with the DTI and the Office of Telecommunications, the regulatory body for the industry, include foreign operating groups and equipment suppliers.

RDD, the Japanese international service provider, for example, is anxious to keep in touch with the deregulation process in the UK.

On the equipment supply side, Ferranti is interested in the sale of transmission equipment, while Pan American Satellite, an American group, can offer capacity on the satellite it is due to launch this week.

The operating companies believe it will be possible to establish a system for a capital outlay of between £2m and £5m on the transmission stations, which will be clustered at three sites around the country.

They claim they will easily undercut BT rates, one executive saying they could charge half as much as BT and still make a handsome profit.

Setting up the services, a number of which will be able to run on one transmission station, is likely to be more costly. SIS, for instance, has spent about £85m in its betting shop system, although experience in the US, the only market where such services are widely operated, has shown they can be established rapidly and earn solid profits.

'Upward pressure' on wage demands

By Our Labour Editor

PRESSURES forcing wage settlements upwards are intensifying while downward pay pressure is declining, according to figures published today by the Confederation of British Industry.

Provisional figures from the CBI's pay databank, published in its bi-monthly Employment Affairs Report, show settlements in industry averaging 6 per cent in the first quarter of this year, compared with 5.5 per cent in the final quarter of 1987.

Settlements are also increasing in the private service sector, averaging an estimated 6.9 per cent so far this year compared with 6.7 per cent for the second half of 1987.

All the upward pressures on pay charted by the CBI are increasing, apart from the cost of living. In 1987-88, 23 per cent of respondents to the CBI's survey said it was an important upward pressure.

Factors cited by the CBI as increasing upward pay pressure were as follows: company profit levels were mentioned by 23 per cent of respondents in 1987-88, compared with 20 per cent in 1986-87. Labour productivity was mentioned by 19 per cent in 1987-88, compared with 15 per cent the previous year.

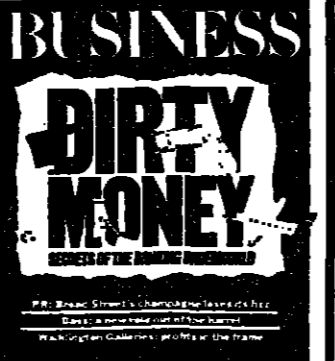

Q. WHY IS A BOMBAY BUS TICKET WORTH \$10,000?

A. HAWALA

Among the world's banking networks is one so secret it has no address, no records, no controls. But your corner shop may be part of it. This month, BUSINESS investigates how Hawala, India's money laundry, is now being hijacked by international crime.

Also, why a former Co-op shelf-filler is soup up US supermarkets, how Bass is fermenting a leisure empire, timely advice on pension plans, the discreet charm of the Costa del Sol and the problems facing ageing studs.

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Lawson says tax reforms are vital for British economic renaissance

BY RALPH ATKINS

INCOME TAX reductions have become part of "the new international consensus of the 1980s," says Mr Nigel Lawson, Chancellor of the Exchequer, in a pamphlet published today.

In a comprehensive review of the Government's taxation policy, Mr Lawson argues that its reforms are about changing the "very culture" of Britain. He says tax reform is an essential instrument for improving the performance of the economy and has played "a critically important part in Britain's economic renaissance."



Nigel Lawson: tax burden has moved to better-off

The pamphlet, published by the Conservative Political Centre, a party think tank, contains the first overview of taxation policy written by Mr Lawson since he became Chancellor.

Mr Lawson says other countries are following tax policies similar to Britain's. In particular, income tax rates are being cut in the US, Canada, Japan and New Zealand. He says the burden of income tax in Britain has shifted from the great bulk of the population to the better-off. In the final year of the last Labour government, the top 5 per cent of taxpayers shouldered 24 per cent of total income tax payments; in the current financial year - in spite of top rate tax cuts - they will bear 28 per cent.

"We have now brought the top

rate down to 40p in the pound, which most people will regard as reasonable. So for the first time in our adult lives, Britain is a low-tax country," he says.

Mr Lawson links tax policy closely with the Government's macro-economic strategy. He says it has proved wrong those economists who argued in the early 1980s that a budget deficit was needed for economic growth. "Everyone - or almost every-

one - now accepts that the proper role of macro-economic policy is to keep downward pressure on inflation and to maintain a stable framework in which the private sector can expand."

Mr Lawson says the Government's objectives have been to leave people with more of their own money and to reduce marginal tax rates so that it is worth working for an extra pound of profit or earnings.

It has also sought to ensure that people's choices are distorted as little as possible.

He admits that taxes and national insurance as a proportion of national income have risen since 1979 but says the burden is now better distributed. He argues that taxes on companies have been shifted away from employment to profits, while taxes on individuals have been transferred from income to spending.

Looking to the next decade, Mr Lawson says planned changes to the tax system that will allow husbands and wives to be taxed independently will enhance further "the acceptability" of the tax system.

"We may well come to look back on the 1988 Budget not only as the one which finally marked the end of high tax rates in the UK... but also as the Budget which marked the end, at long

last, of the second-class status of married women," he says.

Tax Reform: the Government's Record. Conservative Political Centre, 32 Smith Square, London SW1P 3HZ. £1.75.

The majority of British families pay more in tax and national insurance contributions than they did in 1979, in spite of subsequent cuts in income tax rates, Mr Gordon Brown, Labour's treasury spokesman, claimed yesterday, writes Michael Cassell.

Mr Brown, who said that all his information came from figures supplied by the Government in parliamentary answers, said the average family would this year pay 36.9 per cent of its total income in taxes and contributions, against 35.6 per cent in 1979.

The average earner, he added, was now paying £41 a week in income tax, £32 in national insurance contributions and £32 a week in VAT, excise duties and other indirect taxes.

Mr Brown claimed that only the top one per cent of wage earners had seen their tax burden sharply reduced. Cuts at this end of the income league had been worth an average £20,000 a year and the share of income paid in taxes had fallen by anything between 10 per cent and 40 per cent.

Short Bros wins orders for aircraft parts in US

By Michael Dome, Aerospace Correspondent

SHORT BROTHERS, the Belfast aerospace group, has won work worth between £25m and £40m as a result of recent big orders from US and other airlines for Boeing aircraft and for Rolls-Royce jet engines.

More than 200 Boeing 737, 737 and 747 airliners worth several billion dollars collectively have been ordered by US and UK airlines and by the US-based International Lease Finance Corporation. Short's share of these deals will include work on inboard trailing-edge wing-flaps for the Boeing 737, undercarriage doors for 747s and rudders for the 737s.

In addition, Short will share orders for Rolls-Royce RB-211-535 engine mountings and casings for the 50 firm and 50 optioned 757s for American Airlines, and possibly also for RB-211-524s for the Boeing 747-400s ordered by ILFC.

Mr Roy McNulty, managing director of Short, said the company's work on airframe parts had been inconspicuous. But with forecast aircraft demand indicating strong growth, contracts with Boeing and Rolls-Royce demonstrated the benefits of applying their expertise in making and designing complete aircraft to production of high-technology components.

Lombard, Page 23

Compact disc player sales soar

BY TERRY DODSWORTH, INDUSTRIAL EDITOR

THE UK market for compact disc players soared to almost 1m units last year, comfortably replacing the video cassette recorder market as the fastest-growing sector of consumer electronic sales.

The sharp rise in demand, up about 38 per cent on 1986, puts compact discs alongside video cassette recorders and colour televisions as one of the most successful products ever in the household electronics industry.

It also adds to the UK's deficit in consumer electronics at a time when the Government's policy of encouraging inward investment from Japan was beginning to reduce the imbalance in other electronic products.

Sales figures take into account both stand-alone CD players and combination units included in music centres. According to the British Radio and Electronic Equipment Manufacturers' Association, trade shipments of separate players amounted to 737,000 units last year against 438,000 in 1986 and only 147,000 in 1985.

Estimates of combination player sales made by the BIS Mackintosh market research group amount to around 250,000 units, taking the total market to not far short of 1m, with a retail value of approximately £220m.

Virtually all of these products were imported. There are no UK manufacturers in the industry, which is dominated by Philips of the Netherlands, with about 20 per cent of the market, and Sony of Japan with 12 per cent. All the other leading companies are Japanese and of these only Aiwa manufactures in the UK.

The surge in CD player imports comes at a time when UK-based television manufacturers have managed to break into trade surplus for the first time since the early 1980s.

Despite the fact that all British-owned TV manufacturing ceased last year with the sale of Thorn EMI's Ferguson subsidiary to Thomson of France, the rise in the production from Japanese-owned plants in the UK pushed up exports to £209.6m last year, just £400,000 more than imports.

For consumer electronics producers, the upturn in CD player sales coincides fortuitously with stagnation in the video cassette recorder sector.

According to the association, VCR shipments rose by only 2.2 per cent in 1987 against 30 per cent the previous year, reaching 2.2m units. Manufacturers have also been hit by a sharp price drop in VCRs. At present, 54 per cent of UK households own a VCR and experts believe the market will be saturated when it reaches the 70 per cent level.

Two Liverpool firms of solicitors merge

BY IAN HAMILTON FAZEY, NORTHERN CORRESPONDENT

TWO OF Liverpool's oldest firms of solicitors - each a specialist in particular commercial legal areas - have merged to create a more broadly based practice that will further strengthen the north of England's autonomy in professional services for industry.

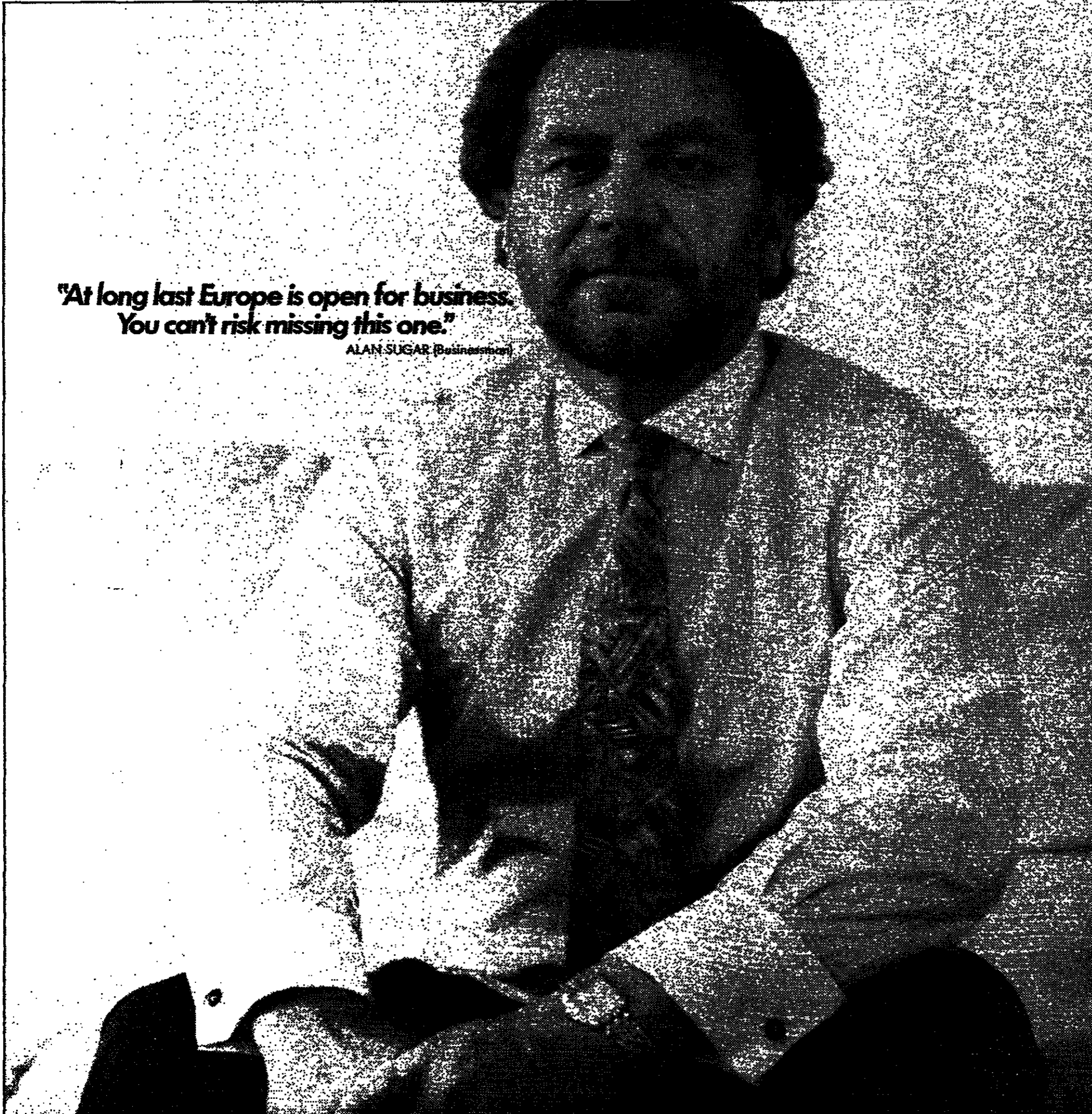
The new firm, Weightman Rutherford, combines Weightman's shipping, litigation, insurance and rapidly growing professional indemnity business with

Rutherford's expertise in employment law and alcohol licensing. Weightman's dates back to 1860 while Rutherford's origins have been traced to 1828.

Shipping, insurance and brewing remain major industries and employers in the north-west, although the practice's most famous client is a smaller business, Liverpool Football Club, for which Rutherford acted for many years. Mr Tony Ennor,

vice-chairman of the new practice, is a Liverpool FC director.

The chairman of Weightman's is Mr Ron Bradshaw. Weightman Rutherford has 22 partners, 11 other qualified solicitors and 130 staff. Coupled with its specialities, this puts it in a similar league to about a dozen other emerging legal firms in Merseyside, Greater Manchester and Yorkshire which have grown or merged recently.



"At long last Europe is open for business. You can't risk missing this one."

ALAN SUGAR (Businessman)

Amstrad computers are market leaders in several European Community countries.

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the department for Enterprise

APPOINTMENTS

Regional general manager for NatWest division

- Mr Don Anderson has been appointed a regional general manager in NATIONAL WESTMINSTER BANK'S domestic banking division. Regional executive director for outer London regions since January 1987, he joins Mr Hugh Jones and Mr Gordon Lane as head office-based regional general managers responsible for controlling the bank's new regional structure.
- Mr Norman Robinson and Mr Peter Taylor have been appointed joint managing directors of SHARP & LAW SCHOPTERS. Mr Robinson was contracts and production director, and Mr Taylor was sales director. Mr Doug Thompson has been appointed contracts director.
- GRAND METROPOLITAN has decided to structure its organisation according to its strategic business sectors and has realigned board responsibilities as follows: Mr G.J. Bull (drinks, Far East advisory committee); Mr I.A. Martin (foods, hotels, North American advisory committee); Mr C. Strouger (retailing and property group finance and systems, European advisory committee); Mr D.E. Tapp (betting and gaming, group services).
- W.H. SMITH GROUP has appointed Mr David Roberts, managing director of W.H. Smith Retail, and Mr Neil Thomas, group deputy managing director, to the main board.
- AYH PARTNERSHIP has appointed Mr Michael Wright as divisional director of project management from July 1. He was with Trafalgar House Developments.
- Mr David Firth has been appointed company secretary of WESTERN MOTOR HOLDINGS. He was financial controller.
- DRINKMASTER, a subsidiary of Imperial, has appointed Mr Lee Cummins as chairman. He replaces Mr Michael Walker, who is retiring but remains an executive director of Imperial.
- SCM CHEMICALS has appointed Mr James Hancock as a director and general manager responsible for the pigments business operation from the UK. He was works manager, Chloride. Mr Stuart D. Esler has been appointed sales and marketing director. He joins from the company's Australian operation.
- ALEXANDER STENHOUSE has appointed Mr Terry Miles as an associate director, international department.
- MILES 33 has made the following appointments: Mr Nick Jones becomes managing director; he was legal systems division director. Mr Roger Miles Holland, the company's founder, relinquishes his post as chairman, but remains a director. Mr Jon Richards, formerly managing director, becomes chairman. He is on the board of parent company UEL, and chairman of Miles subsidiaries Pagtek and Databest. Mr Donald Sullivan, president of the US subsidiary, joins the board. Mr Tom Hucak becomes legal systems director. He was director of sales and marketing of the legal systems division.
- Mr David G. Tree has joined the board of HIGH-POINT SERVICES GROUP as a non-executive director. He is a director of SBCL Savory Mill's corporate finance department, where he specialises in the construction industry.
- GIBBS HARTLEY COOPER, Lloyd's broking subsidiary of The Hongkong and Shanghai Banking Corporation, has appointed Mr Mike Bishop as joint managing director of its reinsurance division and Mr Keith Walker as a director. They will be joined by Mr Morley Speed as a director on July 1. They all join from Golding Stewart Wrightson, recently acquired by Willis Faber.

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Handwritten signature or note at the bottom of the page.

Council uses new spending rules to cut energy bills

BY STEVEN BUTLER

BRITAIN'S energy management industry stands to receive a big boost if a contract recently signed by Lancashire County Council sets a precedent for other local authorities.

Lancashire has become Britain's first local authority to sign an agreement under new Treasury guidelines which allow a contract energy management company to provide capital investment while guaranteeing a reduced energy bill.

The arrangements are attractive because they promise to reduce energy bills without cutting into the authorities' capital spending allocations. If framed properly and approved by local auditors, they are reckoned as revenue contracts which do not run foul of spending limits imposed by the Government.

Contract energy management is a concept that has gained wide acceptance in the private sector. Because of the large initial capital outlay, a private company may hesitate to replace inefficient heating equipment. The contract energy management company solves this by finding a solution to the energy problem and financing the cost of new equipment. The savings in energy bills are split between the two parties for an agreed period, after which the equipment belongs to the council.

The agreement includes a technical and service component as well as a financing commitment by the management company, which assumes the risk for the effectiveness of the scheme.

Up to now, local authorities have hesitated to enter such schemes, fearing that the management company's capital expenditure would be counted against their permissible spending limits, despite strong endorsement of the schemes by the Department of Energy.

The Treasury's concern has been that energy management

contracts would amount to little more than disguised schemes to finance capital investment, and that part of the savings would simply be passed to a private company. In guidelines issued late last year, the Treasury indicated that contracts could be considered as revenue contracts provided that management services was the dominant element.

Lancashire County Council, which has a total annual energy bill of £14m, has signed a seven-year contract with Inenco, a private contract energy management group. The prime motivation for the council, as Lancashire county chief engineer Mr James Hopkins confirms, is that it solves the financing problem. Lancashire, which has 3,500 buildings to manage, has an annual capital investment programme of £300,000. The Inenco proposal to manage heating plant in a number of the buildings involves a capital commitment of £350,000.

In the end not a penny will come from the council account and Lancashire will receive an immediate positive cashflow.

Inenco says it can cut the buildings' annual energy bill by at least 41 per cent from a starting base of £260,000. The first chunk of savings will go to the council and the remainder of an agreed amount will go to Inenco. The two parties will split any savings beyond the 41 per cent, thus retaining an incentive to continue conservation efforts.

Inenco figures that it can cover its capital and financing costs in four years of the contract.

The novel aspect of the deal was to present all this as a management contract. This was done by means of a substantial service component including design, installation, and monitoring and management of the system. That was enough to satisfy the district auditor who approved the scheme.

Call for changes to legislation on supply

By Maurice Samuelson

BRITAIN'S antiquated legislation governing electricity supply should undergo sweeping changes when the industry is privatised, says the Electricity Consumers Council in a report published today.

The report, part of the council's consultations with the Energy Department, calls for a new legal framework based on clarity, consistency and fairness. Its recommendations include:

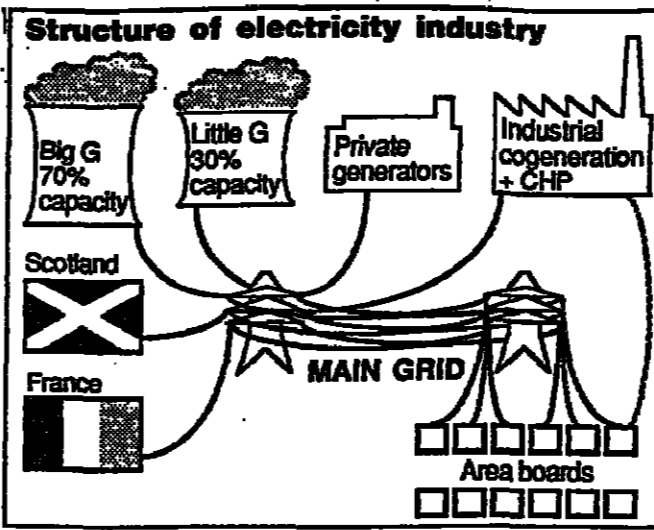
- The new electricity distribution companies must be required to introduce effective procedures for handling complaints.
- The new director-general of electricity supply must have powers to determine any complaints that the distribution companies fail to resolve.
- Disconnections for debt should be unnecessary as the companies should be required to supply for cash where they are not prepared to supply on credit.

Mr Tony Boorman, the council's director designate, said the existence of 22 acts of Parliament dating from 1882 did not reflect the needs of the electricity market in the late 20th century.

Protecting the Customer, Privatisation Discussion Paper 7, Electricity Consumers Council, 2118 Torrington Place, London WC1E 7LL. 25.

Max Wilkinson on the continuing debate over how to regulate a privatised industry

Battle for commanding heights of electricity



CANNONS are being trundled out around the electricity industry in readiness for a battle over the powers of the regulator after privatisation in two years' time.

The battle, to be fought during the summer and early autumn, is likely to have as decisive an influence on the industry's future as last year's struggle about how the state-owned empire should be broken up for sale.

This is because the white paper on the future of the industry in March only sketched out a structure and left most of the important details for a later decision.

However, in the consultations with senior figures in the industry since March it has been widely agreed that the office of regulation will be the commanding height of the new privatised electricity service.

The powers given to the regulator will determine not just the profitability of the 17 private electricity companies, but most of the important relationships between them, the scope for outside competition and the pattern of capital investment.

As the diagram shows, the present Central Electricity Generating Board, which controls power stations and the national transmission grid, is to be broken into three parts. The largest, "Big G", will own 70 per cent of the power stations including all nuclear plant. The remaining 30 per cent of power stations will be owned by "Little G".

The transmission grid will be a separate non-profit-making company to be owned by 12 area distribution companies. These will be the successors to the present area boards, which sell electricity to consumers. In Scotland the South of Scotland Electricity Board and the North of Scotland Hydroelectric Board will be sold separately.

The most important task of the regulator will be to "police" the contracts which the distribution companies will make for buying wholesale power. These could be with generating companies, industrial companies with surplus power ("co-generators"), combined heat and power schemes (CHP) or new independent power companies.

The regulator will have to make sure that these contracts do not result in excessively high prices for consumers.

The battle now being joined is about how the regulator should do this. Not surprisingly, most area board chairmen believe the regulator should be told to interfere as little as possible. They say that the industry is in competition with gas and oil, at least in the heating market. They believe customers can be protected by a

simple formula to limit annual price rises like that applied to gas.

Others, including some civil servants, believe that the regulator will require the most detailed powers to inspect and perhaps disallow individual contracts.

The argument turns on who should carry the main risks of unexpected cost increases, perhaps from rising interest rates, a collapse of the pound or a sharp rise in world prices of coal and oil in dollar terms.

The area boards want electricity consumers to pay rather than their shareholders to pay most of these extra costs, and the generating companies are likely to support them with some reservations. They can cite as a precedent the gas industry where annual price rises are limited by the formula "RPI minus X plus Y". This says, in effect, that prices may rise by X percentage points less than the annual rate of inflation, plus any increase in the cost of buying gas from the North Sea.

The Government will face several difficulties, however, if it wants to apply the same formula to electricity. The most important is that the cost of electricity in the wholesale market reflects a much greater diversity of factors than is the case for gas.

Since electricity can be generated from different fuels including gas, oil, coal or nuclear, with widely varying costs of production, the Government will want to put distribution companies under the strongest discipline to make the best choice of plant. A regulatory formula which allowed all increases in generating costs to be passed on to consumers would not achieve this.

Moreover, a regime which allowed all fuel costs to be passed on could give the industry a perverse incentive to build cheap plant with high fuel costs.

Another major difficulty is that boards in less prosperous regions believe they have less opportunity for reducing their own costs compared with those serving high growth areas.

Proponents of strong regulation say that these difficulties show that the regulator must be able to vet individual contracts.

The argument will come to a head when representatives of the new companies and civil servants meet to draw up the first contracts later this year.

When the industry is privatised each distribution company will be endowed with contracts for the output of a group of power stations (or part of the output of a station). However, it remains to be argued how much of future increases (or savings) in fuel costs should be passed on from generators to distribution companies by these contracts.

The options range from a very general escalator clause linked to world energy costs to a highly specific provision to pass on the fuel costs of each plant.

Madame Tussaud's 'most popular tourist venue'

BY LYNTON McLAN

MADAME TUSSAUD'S, the London waxworks museum, was the most popular tourist attraction in Britain last year, according to the British Tourist Authority.

A survey shows that the museum had 2.6m paying visitors, and was the top tourist attraction for the second year running. Blackpool pleasure beach was the most popular free attraction, with 6.4m visitors. Madame Tussaud's is owned by Pearson, publisher of the Financial Times.

The number of visitors to Britain's main tourist attractions rose 5 per cent last year to a record 147.5m, the authority says.

The second and third most popular attractions charging admission were Alton Towers, the leisure park in Staffordshire, and the Tower of London, both of which had more than 2m visitors. Blackpool Tower came fourth

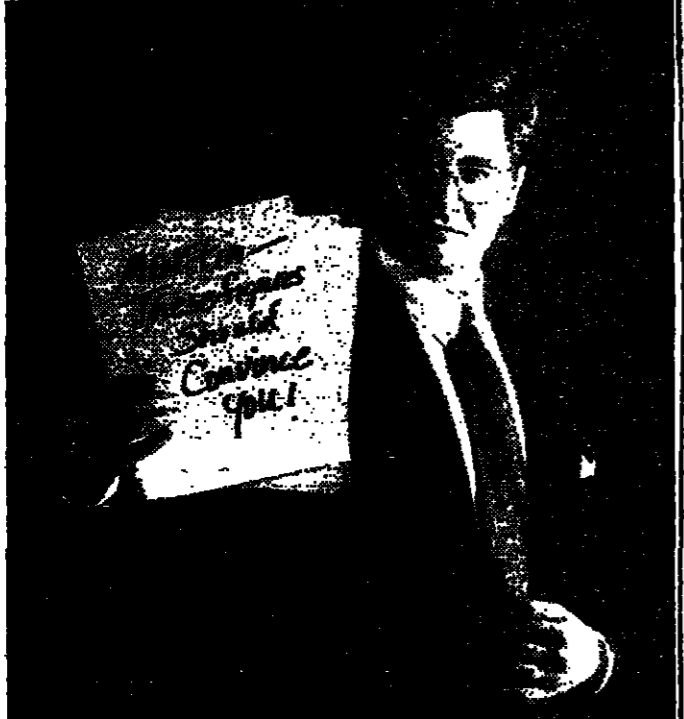
with 1.5m visitors and Kew Gardens, London, fifth with 1.3m visitors, followed by London Zoo.

Half of the top 20 attractions charging admission last year were theme or leisure parks. Only four of the top 20 were historic properties, although the tourist authority says visits to such sites were ahead 9 per cent.

The most popular garden after Kew was Duthie Park Winter Gardens, Aberdeen. This was followed by Stapely Water Gardens, Cheshire; the Royal Botanic Garden, Edinburgh; and Wisley Garden, Surrey.

The British Museum was the most popular museum with 3.7m visitors, followed by the National Gallery with 3.5m visitors, all admitted free.

Visits to tourist attractions 1987. BTA, Circulation Unit, 4 Bromley Rd, London SW4 0BJ. 88.00.



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GLOBAL INTEGRATION OF JAPANESE MANAGEMENT

Abreast of Market Trends

With market capitalisation of approximately \$27 billion and global revenues in 1986/1987 of some \$5.1 billion, Daiwa Securities Co. Ltd. today ranks among the world's largest securities firms. A leading member of the Tokyo Stock Exchange, it is a prime sponsor of foreign listings in Tokyo, and a market maker in Japanese equities and warrants internationally. In North America, Daiwa is a primary dealer in US government paper, while in London, Amsterdam, Hong Kong and Singapore banking subsidiaries complement its securities operations.

Recent developments include the pioneering of the Euroyen commercial paper market, devising the innovative Daimyo (Samurai-Euroyen hybrid) concept for a £40 billion issue by the World Bank, and leading a \$125 million domestic offering for General Telephone of California—the first US domestic issue to be led by a Japanese securities house.

Makoto Kasui, Chairman of Daiwa Europe, discusses Daiwa's recent performance and outlines prospective future trends.



Mr. Makoto Kasui, Chairman, Daiwa Europe Limited.

Robins: How are you finding world capital markets activity in the aftermath of last October's global downturn?

Kasui: Business is much healthier than it was at the end of 1987. Christmas was rather gloomy, but we have experienced a very significant recovery since February, broadly in line with Tokyo's upturn. At the same time, we have diversified our base, although trading in Japanese securities remains our most stable and reliable source of income. The net result is that, although the first four months of the current financial year were, to say the least, rather difficult, prospects for the year as a whole have greatly improved.

Robins: Where is Daiwa currently strongest?

Kasui: Warrant-related issues are performing very well. Over-supply weakened the warrant market a little last summer, and the October crash compounded this problem. But October also taught some valuable lessons. Issuers and underwriters are now less aggressive than they were last year, and more concerned with the maintenance of a good, orderly market. Better management is consequently linking with reviving demand to generate renewed sector strength.

Robins: How do you see world market trends developing?

Kasui: New York showed signs of recovering earlier this year, but has since fallen back, and I think we must remain very cautious—at least until after the presidential elections.

Japan on the other hand looks very strong, with a very favourable bond market supply and demand position. I am thinking here particularly of the Japanese government's decision to redeem ¥16.3 trillion worth of bonds, of which some ¥10 trillion carry a coupon of 6.1 per cent at a time when Japanese bonds have been averaging 4.6 per cent.

Robins: What sectors are you recommending?

Kasui: Well, the Japanese economy is in fact so buoyant at the moment that virtually every sector has its attractions for investors. Consequently, it is timing which holds the key to investment

while at the same time working to extend our loan portfolio to qualify corporate customers both within the UK and internationally. In the longer term, we regard continued development of our banking operations as a key area of focus, not only to complement our existing operations in the London market, but as a major element in our global strategy of diversification.

Robins: You are waiting for a gilt dealing licence as well.

Kasui: We have successfully completed our discussions with the Bank of England and, subject to filling one or two more positions on the team, we hope to begin market making in gilts shortly. We feel that dealing in government paper in London will complement our existing operations dealing in government paper in Tokyo and New York.

Capital base boosted

Robins: Have you plenty of capital to finance all these plans?

Kasui: Certainly. Daiwa Europe's paid up capital at the end of September totalled £35 million, and our overall net worth was in the region of £100 million. We strengthened this base earlier this year with a subordinated loan of some £30 million that ranks as qualifying capital under The Securities Association rules, and we are considering further additions to our capital base which I expect will raise our total available capital resources to approximately £170 million in the near future.

Robins: What is your strategy for the future?

Kasui: We have some clear

decisions in the Japanese market, rather than sector selection. Having said that, Japanese investors themselves have recently been tending to focus particularly on consumer durables and domestic growth-oriented market leaders, and thereby pushing prices to very high levels. However, Tokyo also offers many attractive second line issues with strong fundamentals and promising prospects.

Robins: What view do you take of London?

Kasui: London's fundamentals are very attractive—the political environment is stable, business is going well, sterling is strong. Consequently, we fully expect Japanese investment exposure in the London market to increase substantially in the coming months.

M&A surge gathers strength

Robins: What about the acceleration of M&A interest by Japanese companies?

Kasui: One must remember that Japanese corporate managers have tended up to now to avoid head-on culture clashes, preferring to buy land, build new facilities, and hire and train local workforces, rather than commit themselves to buying existing operations which may follow quite different business practices, and possess very different corporate cultures. Consequently, I think it may still be a little early to talk in terms of a major outflow. Nevertheless, Japanese companies are definitely taking more interest in cross-border corporate acquisitions these days, and we are watching this trend very closely. Certainly we are in an excellent position to introduce European companies targeting Pacific Basin markets or seeking capital, technical or management inputs to potential Japanese partners.

Robins: What plans do you have for your banking operation?

Kasui: Daiwa Europe Bank is proving a great success. It began operations in March 1987, and earned a good profit in its first reporting period to September 1987. More recently, we have developed a strong capability in Swaps,

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"I'VE LEFT MY UMBRELLA IN A TAXI."

To be fair, our American guest did give us a clue.

"It's a Mercedes," he told us. No kidding. Just like the other 999 taxis cruising the streets of Jerusalem.

In such circumstances, the majority of staff in the majority of hotels might, understandably, have offered sympathy and very little else.

Fortunately for the owner of the broly, he was staying at the Sheraton.

And although the odds of finding a needle in a haystack were slightly shorter, this didn't deter our doorman.

To him, the lost umbrella came as a personal challenge.

With the chances of finding it slim by anyone's standards, he was on the case.

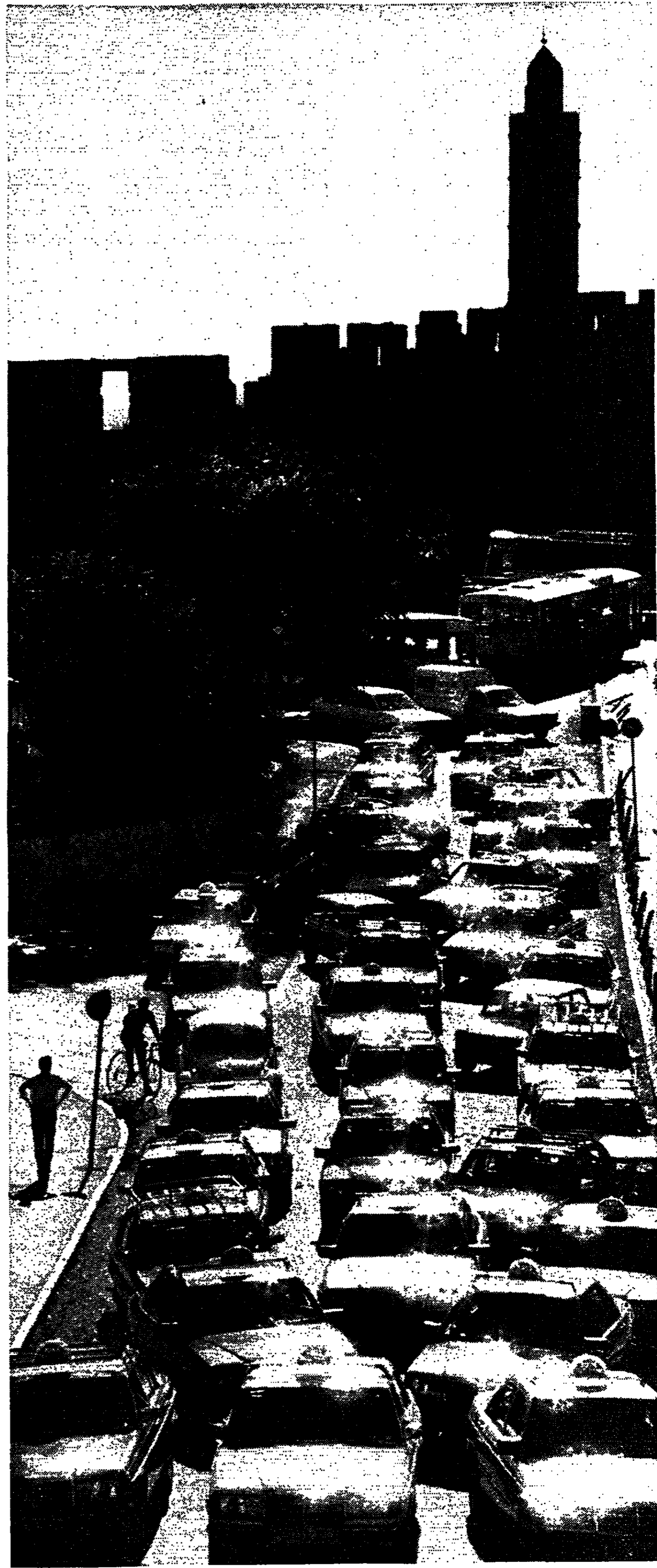
Two days later, the taxi was located and the broly returned to its incredulous owner.

At Sheraton, we have a training programme for all our staff which aims to impress upon them our idea of service.

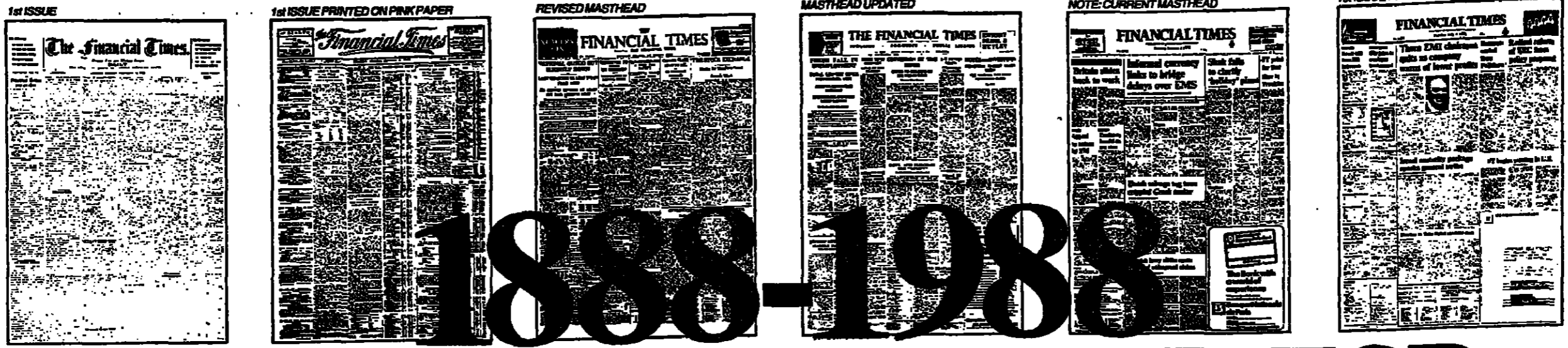
We've summed it up as 'Little things mean a lot.'

It would appear that the doorman from the Jerusalem Sheraton, for one, has got the message.

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A CENTENARY EVENT FOR READERS OF THE FINANCIAL TIMES

THE QUEEN ELIZABETH II CONFERENCE CENTRE
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7, 8 & 9 JULY, 1988

As part of its Centenary year, the Financial Times is pleased to announce **Personal Investment 1988**. An Exhibition for those seriously interested in investment, it will provide an opportunity for its readers to discuss their individual personal financial planning requirements and take part in the exciting programme of events that will contribute to this celebratory occasion.

Entry to the Exhibition costs £5.00 which includes a ticket

for you and a guest, a catalogue and the opportunity to visit the FT Centenary Photographic Display and a special show of paintings by the New English Art Club.

Those attending the Exhibition will also be able to register for any of the associated conferences, workshops and events listed below. At £10.00, the cost of each is attractively low but numbers are restricted and early booking is essential.

PROGRAMME OF EVENTS

Thursday, 7 July
10.00 - 13.15 **OPENING CONFERENCE - CAPITAL PROTECTION AND GROWTH**
Financial planning for men and women in late career and at retirement.
Sir Mark Weinberg
Chairman, Allied Dunbar Assurance
Deputy Chairman, Securities & Investments Board
Gordon Peppers
Director & Senior Adviser, Midland Montagu
Alan Kelly
Partner, Grant Thornton
Author, 'Financial Planning for the Individual'
John Patterson
Director, National Savings
Michael Pich, CBE
Former Director, Noble Lowndes
Former Chairman, NAPP

14.00 - 17.15 **PERSONAL FINANCIAL PLANNING AFTER THE 1988 BUDGET**
An overview of the income and capital changes in the most recent Lawson Budget and suggestions on the financial and investment decisions that follow.
Lord Bruce Gardyne of Kirkliden
Former Economic Secretary to the Treasury
David Stewart
Senior Tax Partner, Deloitte Haskins + Stott
John Chown
J F Chown & Co
Hugh Blakeway Webb
Tax Partner, Deloitte Haskins + Stott

18.00 - 20.30 **PERSONAL PENSIONS**
A subject of immediate importance to men and women in employment as the new pensions regime takes effect in July. An authoritative panel looks at the risks and possible rewards of leaving employer-run schemes.
Dryden Gilling-Smith
Managing Director, EBS Management
Maurice Oldfield
Former President, NAPP
Group Pensions Executive, Allied Lyons
Robert Ashurst
Partner, R Watson & Sons
An insurance company speaker to be announced

18.00 - 19.30 **INVESTING IN GOLD**
Should gold play a bigger part in the portfolios of British investors? A distinguished panel will answer the question and discuss how to proceed.
Robert Guy
Director, N M Rothschild & Sons
Jillian Baring
Gold Specialist, James Capel
Anthony Garrett
Deputy Master & Comptroller, The Royal Mint

Friday, 8 July
10.00 - 13.15 **CAPITAL PROTECTION AND GROWTH FOR DIRECTORS AND SENIOR EXECUTIVES**
Personal investment strategies for men and women at the top of companies and with businesses of their own.
The Rt Hon Cecil Richardson, MP
John Forsyth
Director, Morgan Grenfell
Barry Riley
Investment Editor, Financial Times
Tony Vernon-Harbutt
Author, 'Charterhouse Guide to Top Management Remuneration'
Dryden Gilling-Smith
Managing Director, EBS Management

10.00 - 13.15 **WORKSHOP FOR EXPATRIATES**
A special workshop on the requirements of men and women living abroad.
Peter Gartland
Editor, The Internationalist
Peter Donnan Davis
Managing Director, Abbey National (Overseas)
John Critchenden
Manager, Expatriate Services, Lloyd's Bank
Donald Eldon
Director, Wilfred T Fry (PFF)

14.00 - 17.15 **ALTERNATIVE INVESTMENTS**
An examination of areas of interest to collectors including discussions of market trends by Sotheby's directors, chaired by one of the principal contributors to the BBC Antiques Road Show.
Lecturers: Simon Taylor
Christopher Payne
David Bennett
David Bettle

18.00 - 19.30 **SOTHEBY'S WINE TASTING**
This is a fascinating opportunity to join a tutored tasting of investment quality wines. Numbers are limited and early application is essential.
Tutor: David Molyneux-Berry MW
Head of Sotheby's Wine Department
Introduced by: Edmund Penning - Rowse
FT Wine Correspondent

17.00 - 18.30 **REVIEWERS' EVENING**
Offered on a complimentary basis to a limited number of readers, this distinguished panel will be chaired by the FT Literary Editor.
Contributors: Tony Curtis
Francis King
Rachel Billington

Saturday, 9 July
10.00 - 13.00 **CAPITAL PROTECTION AND GROWTH FOR THE YOUNGER INVESTOR**
Designed for men and women planning an investment strategy for the longer term.
Richard Lambert
Deputy Editor, Financial Times
David Bettle
Director, Sotheby's
John Brennan
FT Property Correspondent
Hugh Llewelyn
Bailey Shalton
Speaker on Personal Pensions to be announced

14.00 - 17.15 **INTRODUCTION TO INVESTMENT**
The Stock Exchange and its three markets, unit linked investments, high street developments and investor protection are among the subjects to be covered.
John Edwards
Personal Finance Editor, Financial Times
Mark Boland
Director-General, Building Societies Association
Daniel O'Shea
Director, M & G Investment Management
Author, 'Investing for Beginners'
Ian Morrison
Group Corporate Affairs Director, Midland Bank
Colin Chapman
Editor, Financial Adviser
Speaker from The Stock Exchange invited

14.30 - 17.00 **"HOW TO SPEND IT"**
An afternoon with:
Lucia van der Post
(with a lot of help from Harrods).

11.00 - 12.30 **TASTING OF PINK CHAMPAGNE**
14.00 - 15.30 Two tutored tastings of pink champagne with sparkling examples from leading houses.
Tutor: Robert Joseph
Publishing Editor, 'Wine' Magazine

EVENING CRUISE TO GREENWICH AND SYMPHONY CONCERT
A limited number of tickets are available, at £20.00 each, for a boat trip from Westminster to Greenwich for a symphony concert by the NCOs Symphony Orchestra with Anna Steiger as soloist and with the German conductor Volker Wangenheim.
Programme: Wagner
R Strauss
Dvořák
Elzot
Granados
Overture: Fliedri
Oboe Concerto Soloist: Donovan Rihue
Song to the Moon and Russian
Carmen: Suite and Michael's Aria
The Lover and the Nightingale from Gaynesse
Mussorgsky arr. Ravel Pictures at an Exhibition
The National Centre for Orchestral Studies has been favourably reviewed by the FT and the NCOs is moving into its new home in Greenwich Borough Hall. Return transport is provided.

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I/we shall attend the Personal Investment Exhibition and wish to register for the following events.
(Please enter the number of tickets required in the boxes below)

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OPENING CONFERENCE - CAPITAL PROTECTION AND GROWTH		CAPITAL PROTECTION & GROWTH FOR DIRECTORS & SENIOR EXECUTIVES	
PERSONAL FINANCIAL PLANNING AFTER THE 1988 BUDGET	<input type="checkbox"/> @ £10.00 = £	WORKSHOP FOR EXPATRIATES	<input type="checkbox"/> @ £10.00 = £
PERSONAL PENSIONS	<input type="checkbox"/> @ £10.00 = £	ALTERNATIVE INVESTMENTS	<input type="checkbox"/> @ £10.00 = £
INVESTING IN GOLD	<input type="checkbox"/> @ £10.00 = £	SOTHEBY'S WINE TASTING	<input type="checkbox"/> @ £10.00 = £
		REVIEWERS' EVENING	<input type="checkbox"/> FREE
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FINANCIAL TIMES SURVEY



The glamour of the Riviera is only part of the picture. In the past few years, southern France has modernised

its economic base and transformed its image. This four-page survey by Paul Betts looks at a region which now faces new challenges and opportunities

Sunbelt at a crossroads

THE SOUTH of France seems to be following the Californian model. Long associated with the image of sun, sea and sex, it is now starting to acquire the allure of a high-tech economic sunbelt. From Nice and the tiny principality of Monaco to Marseilles and west to Montpellier and Toulouse, new high technology enterprises and science parks have been mushrooming during the last few years. With them have come a score of new service industries which have helped diversify and broaden the economic base of southern France.

The traditional economic sectors of this large region have also been undergoing a profound, if at times painful, transformation. Around Marseilles, where the bulk of the region's traditional industrial activities have long been centred, the steel and petrochemical industries have had to adapt to a changing and increasingly difficult international economic environment.

The French government's ambitious design in the 1970s - to create a major steel industry focused around Fos, near Marseilles - was never completed in the face of the crisis which swept the European steel industry. But Fos today remains the most important oil refining and petro-

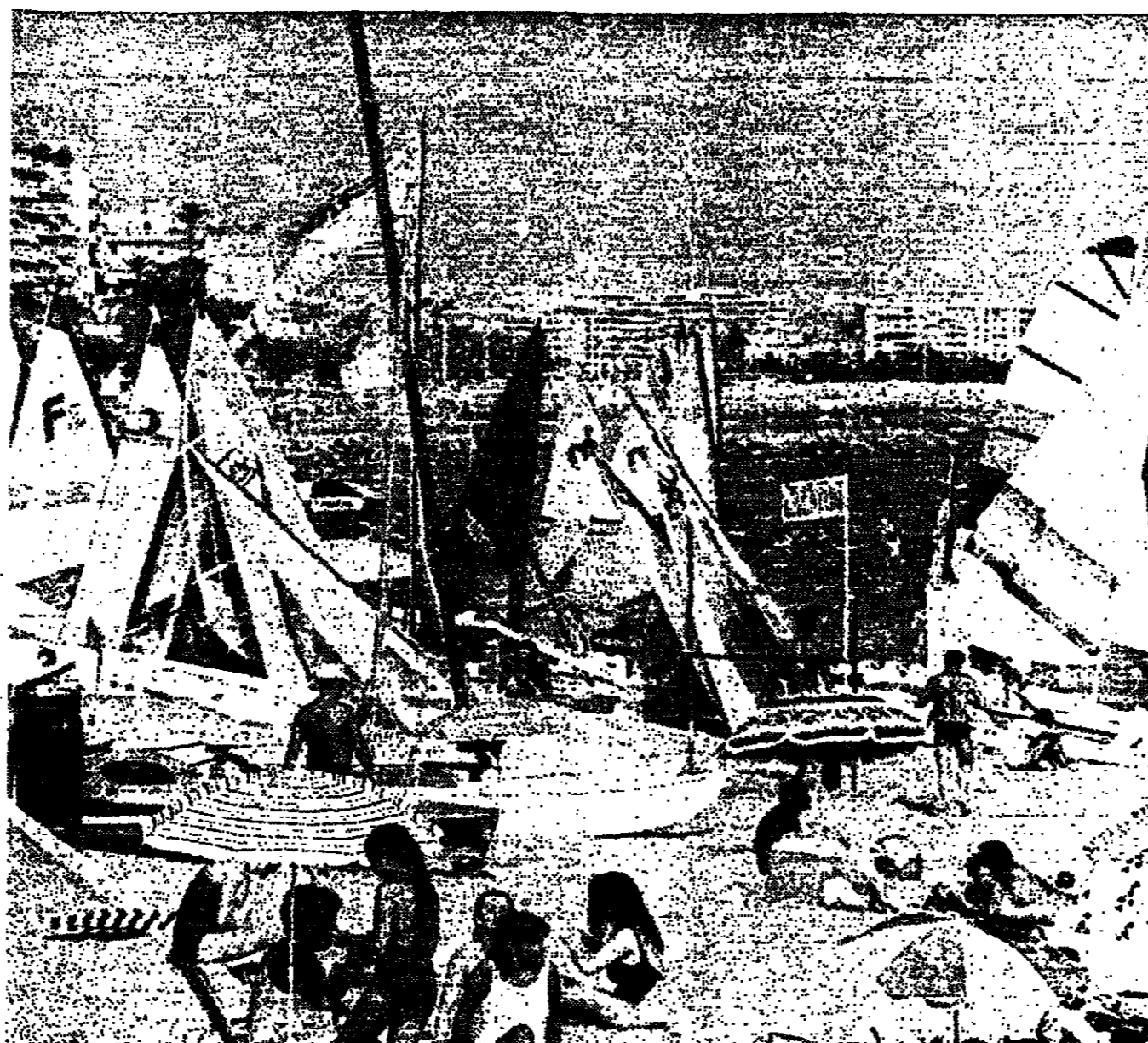
chemical complex in the Mediterranean served by the port of Marseilles, the second largest in Europe after Rotterdam.

Even though the future of two of the four big refineries in the Marseilles basin is clouded, two major international oil groups, Shell and BP, have recently deployed major new investments in the area. Atlantic Richfield, the large Californian-based oil group, has also invested in a \$2.5bn new facility in the area to produce additives for the new market for lead-free petrol in Europe.

If the local textile and food processing industries have also suffered and the shipyards of La Ciotat are closing down, the region has managed to diversify its economy into new service and industrial sectors to offset the decline of the traditional industries.

IBM was among the first to choose southern France for major industrial and research facilities. The American computer giant manufactures its large mainframe computers at Marseilles and picked the area above Nice for one of its most important telecommunications research facilities in Europe.

Other high tech companies have emigrated to southern



Southern France AND THE Riviera

France. The science park of Sophia Antipolis between Nice and Cannes has become the home of several major French and international groups. Aix-en-Provence is an important semiconductor centre. Marseilles is building its own science park to capitalise on the heavy concentration of national and private research laboratories in the area. Montpellier is developing an international reputation for agricultural and medical research, while Toulouse has become the aerospace capital of France.

Tourism and agriculture, two

of the traditional backbones of the economy of southern France, have also been adapting and modernising themselves to changing economic circumstances.

In the Languedoc-Roussillon and the Provence-Cote d'Azur areas, wine-growers have been investing to improve the quality of their wine and have made a major effort to develop new export markets to compensate for the decline in wine consumption in France and the pressures from Brussels to reduce production of cheap local table wines.

It has not been without pain as the regular popular demonstrations of anger and frustration of the local wine growers continue to illustrate in eloquent fashion.

The enlargement of the European Community with the entry of Spain has provoked considerable anguish in the region's agricultural community. But it has also provided them with a challenge to accelerate the modernisation and transformation of this traditional and politically influential sector.

For decades, the South of France relied on the winter sea-

son for the bulk of its tourism. This has now changed and the summer has become the main season. But sun and sea, and a glamorous image, are no longer sufficient to sustain tourism on the Riviera and elsewhere in the Midi. Cheap air travel has opened up new far-away resorts to mass tourism and eaten into the traditional tourist sector of southern France.

But the region has invested heavily to build up a diversified and all-year tourist business. It has developed new ski resorts in the Alps and a thriving business

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□ Beach at Cannes photographed by Ashley Ashwood

convention sector. Major investments have been deployed along the Languedoc-Roussillon coast as well as on the Riviera, while the major cities of the area have invested in new facilities to attract the increasing number of short-stay and business visitors to the region.

All this would not have been possible without major infrastructure investments to support the evolution of tourism and the diversification into new business and industrial sectors. Southern France has a number of important international airports at Nice, Marseilles and, to a lesser extent, Montpellier, which have all been engaged in substantial investment programmes to double their capacity.

Good international air connections have undoubtedly played a fundamental role in bringing international investment and companies to the area, attracted by the high quality of life of the Midi. Several large American companies claim that their productivity has increased by as much as 30 per cent since they established themselves in the south of France.

Transport infrastructures have been boosted by new motorway networks and the arrival of France's famous "train à grande vitesse" (TGV), the high speed trains which link Paris with Marseilles, Montpellier, and now Nice. One day, these trains will run directly to the northern part of Europe and to the Channel Tunnel at Calais. The TGV has cut the journey to Paris to around five hours.

The region now hopes that a high speed train link will eventually connect Milan to Barcelona through the South of France, opening up new business opportunities for the area. Indeed, many local businessmen have established increasing contacts and links with Italy on one side and Spain on the other in anticipation of the prospects which the single European market will bring to their activities and to the region in general.

Southern France is likely to find itself at a new central crossroads after 1992. "This region was regarded as the south of Europe. Now it is likely to become the centre of Europe," remarked Mr Raymond Barre, the former French prime minister often described as the best economist in France, while he was campaigning in the Midi during the recent French presidential election.

But if southern France has succeeded in adapting its economy during the past few years, gradu-

ally transforming and modernising its image, it nonetheless continues to face some complex hurdles which it will have to overcome if it is to succeed in completing its evolution in time for the single European market deadline. The biggest and most immediate challenge is perhaps not an economic one, but a political one.

During the past few months, the Midi has captured the national headlines in France because it has emerged as a bastion of Mr Jean Marie Le Pen, the blond bombastic leader of the French National Front. Even before the recent presidential election, Mr Le Pen had won increasing popular support in many parts of a region, whose political evolution has seen it gradually move from the left to the right.

In the first round of the presidential election, Mr Le Pen made some of his most impressive scores in the south, provoking, in his own words, "a political earthquake." In cities like Marseilles, Mr Le Pen scored nearly 30 per cent of the vote, coming ahead of all the traditional right-wing candidates.

His breakthrough in the south is explained by many factors. The large concentration of Arab immigrants, alongside a high proportion of pensioners and old people in the area, has clearly played in his favour. Moreover, he has also found fertile support among the French expatriates from Algeria, the so-called "pieds noirs," who settled in the south after Algerian independence.

The crisis in traditional industrial sectors and the collapse of the Communist Party in the region has further channelled votes from disgruntled and disillusioned electors to Mr Le Pen. Indeed, one of the characteristics of the rise of the National Front in France in recent years has been the parallel decline of the Communist Party, once a strong political force in many key parts of the region. And it seems that many former Communist voters have been attracted to the National Front.

During the presidential election campaign, Mr Le Pen managed to gather in the Marseilles football stadium a cheering crowd of some 30,000 supporters. He has now decided to run in the French legislative elections in Marseilles to try to win a parliamentary seat as a first step towards a bid for the city's town hall in next year's municipal elections.

In other parts of the south, the

Continued on page 4

Message from southern France

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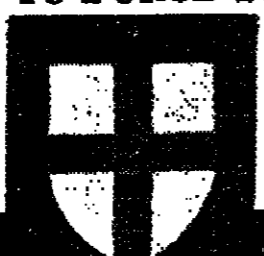
Marseilles's Scientific and Technological assets include 5 universities, some fifteen colleges, over 100 research units. Marseilles hosts leading-edge scientists and successful firms, responsible for major breakthroughs in various sectors: laser, ocean engineering, genetic engineering, information technology, "chips", biotechnology, artificial intelligence, robotics, and what not...

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SOUTHERN FRANCE 2

THE FRENCH call them technopoles and they have been spreading like a disease throughout the country and especially in the South of France.

The "technopole" concept

High tech suits the Riviera

From Nice to Marseilles and on to Montpellier, new technology and science parks have been mushrooming in the landscape as part of a major drive to attract and develop new high technology industries in the area linked to research centres and universities.

Undoubtedly it was Nice which pioneered the technopole concept in the south. Today, the science and technology park of Sophia Antipolis, set on one of the most attractive sites on the Riviera between Nice and Cannes, has become a model of the sort.

Some 150 large corporations have settled there, including Digital Equipment, Dow Chemical, Air France and Telemecanique, among many others. They have also lured 200 or so small companies which have developed profitable niches with as big budgets.

These companies are playing a major contribution in helping diversify the local economy from its traditional tourism base. But the success of Sophia Antipolis has also prompted other cities of southern France to launch technopole schemes of their own.

king Stanford in California and Japan. "I felt France also needed to have its technopoles where high technology, research and training, the academic world and industrial world were all present on one site," he once said.

From the beginning Mr Laffitte wanted to create not only one of the most important science parks in Europe but also one with a strong international vocation.

After a slow start, the park has become a major success story for the region as a whole. This success is based on several factors, according to its promoters of Sophia Antipolis.

To build a technopole, a modern airport with international connections is crucial, explains one regional official. You also need a university centre, a number of high technology industries already located in the area, good cultural and social infrastructures and an attractive site.

"Sophia Antipolis and the Nice area offer all these essential components," he adds. The idea for a science and technology centre at Chateau-Gombert in Marseilles came a few years ago from Mr Gaston Defferre, the city's socialist mayor for 33 years.

Mr Defferre, who died in 1986, was inspired by the American example and saw in the technology park concept a device to stimulate new economic and research activity for his city. At around the same time in 1985, Montpellier and its Socialist mayor, Mr Georges Frêche, also embraced the technopole concept.

But Montpellier turned it into an integral part of the city's new economic strategy. "Unlike Sophia Antipolis, we decided not to build something from scratch on a distinct site," explains a city official.

"Instead, we decided to integrate the technopole concept into the tissue of the city as a whole,

using it as a way of promoting the development of the city not only economically but also socially and culturally."

For Montpellier the stakes were all the more important. Unlike Marseilles, the city had missed out on the industrial revolution of the last century. Unlike Nice, it missed out on the subsequent development of the tourism industry in southern France. But it also had considerable assets.

As one of the largest urban centres in southern France - the population today of the greater city area totals about 350,000 inhabitants, smaller than Toulouse but bigger than Bordeaux - Montpellier claimed one of the oldest and distinguished medicine faculties in Europe.

To capitalise on its strong academic and research tradition, the city decided to attract scientists, engineers and research specialists to the area by developing a number of "poles of excellence" as part of its overall technology park scheme. It thus set about developing specialised scientific sites in health and agronomy. It now has other "poles of excellence" in communications, information processing and tourism.

Montpellier today boasts a population of 50,000 students, several thousand researchers, and the highest birth rate in Europe. During the last two years, 4,500 jobs

have been created as a result of the new technology concept with several small and medium-sized enterprises choosing to settle in the area. Major groups have also invested in Montpellier. IBM, for example, has long had a major presence with one of its most important mainframe computer manufacturing plants in Europe.

The city's integrated "technopole" concept has been backed up by major social and cultural efforts to develop the environment and conditions to attract Montpellier's new breed of entrepreneurs and researchers. Montpellier took a lead in equipping itself on an industrial scale with a fibre optics cable network. It has launched a series of ambitious building projects, including the construction of an international conference centre due to open later this year, and other major architectural schemes.

Like Marseilles and Nice, Montpellier has been developing its transport network to give the city easy international access. Its airport is being expanded and the number of international flights increased. High-speed TGV trains have reduced the rail journey to Paris to four hours 40 minutes. The city now hopes a high-speed train link will eventually link Genoa to Barcelona passing through Montpellier.

At the end of September Montpellier will also be hosting the fourth meeting of the International Association of Science Parks. It will be an occasion for several cities and research specialists to compare notes on their respective experiments and projects in what, for the South of France at least, has so far proved a promising new approach to economic diversification and growth.

MUCH TO its chagrin, Marseilles has been capturing the world headlines in the past few months, as the stage of the major political battle pitching the extreme right National Front against not only the left but also the traditional parties of the right.

The international press descended on the city last April when Mr Jean-Marie Le Pen, the National Front leader, attracted about 20,000 supporters to the football stadium of Marseilles. In the first round of the presidential election, Mr Le Pen scored nearly 30 per cent in Marseilles, beating the candidates of the mainstream right-wing parties.

Much ink has been spilled to explain the Le Pen phenomenon in Marseilles. The large concentration of Arab immigrants in the city; the above-average rate of unemployment; the decline of the Communist Party which for years had channelled the protest vote of the city; the crisis in some of the area's traditional industrial sectors like ship-repair, textiles or steel have all contributed to the rise of the National Front in Marseilles in recent years.

Mr Philippe Sanmarco, a Socialist member of parliament and one of the principal architects in the last few years of Marseilles economic development policies, does not mince his words. It would be "a disaster," he says, "if Mr Le Pen ever achieved his ambition of taking over the town hall of Marseilles, the country's second largest city which, with its 1.5m inhabitants, plays a pivotal role in the economy of southern France."

"His victory would have a disastrous impact abroad and on foreign and French investors. It would probably spell the end of all that has been done these last years," he adds. "Already when I travel abroad people say to me:

Marseilles

Le Pen grabs the headlines

Ah Marseilles, that's Le Pen."

But despite his success in the presidential elections, Mr Le Pen is taking a gamble in Marseilles. "We have a chance of bursting the abscess," says Mr Sanmarco. He adds that it is urgent to do so quickly to enable the Marseilles region to pursue its development and normal evolution.

Indeed, Marseilles has managed in the past with remarkable success to keep the extremes out of its political, economic and social management. Mr Gaston Defferre, the late socialist mayor, ruled over Marseilles for decades by creating a centre-right, centre-left front against the Communists. Mr Sanmarco says that it is now necessary to create a similar front to keep the National Front out of the town hall.

The political cloud hanging over Marseilles could not have come at a more delicate moment. For the city is beginning to reap the fruits of its efforts to tackle the complex social and urban problems as well as restructure the area's economic tissue.

Over the last few years, major investments have been deployed to improve and modernise the city. Marseilles today boasts of a modern underground transport system, an international airport in full development, an extensive network of rail and motorway connections, and some of the most highly regarded hospitals in

tre at Fos, near Marseilles, in the 1970s has never been completed. But Fos and its environs remain one of Europe's most important petrochemical complexes, second only to Rotterdam. It has continued to attract new companies. Atlantic Richfield has invested in a FF2.5bn facility to produce additives for lead-free petrol. Fos, its refineries and chemical facilities are a key component of the port activities of Marseilles.

Although the port has suffered from a period of labour unrest and an increasingly difficult general economic environment - total traffic declined from 98.2m tonnes in 1986 to 91.3m tonnes last year - the port's officials appear confident that it will continue to play a central role in coming years, since they feel the overall growth prospects for southern Europe are promising.

The region around Marseilles has in many ways managed to cope with the crisis in traditional industries like ship-repair and shipbuilding, as well as steel and textiles, better than the northern industrial regions of the country because its economy has always been more diversified. Moreover, the crisis has been more gradual, enabling the region to redevelop itself into new sectors of activity.

A major effort to rehabilitate the city centre has also started to pay off. Although there remains a heavy concentration of immigrants, Marseilles has been making major efforts to integrate them.

Several officials fear that the extreme attitudes of the National Front can only undermine these attempts. They point out that, like many other important port cities, over the centuries Marseilles has seen waves of different immigrant populations arrive, turning it into a melting pot of cultures and races.

During the last few years, a big change has taken place in Marseilles. "Things are moving again down here," says a long-time foreign resident of the city. "Marseilles is attracting a lot of foreign interest and a lot of the old images and clichés about the city are disappearing."

However, the presence of the National Front has revived some of the old phantoms. It has focused national and international attention on the city, which now faces one of the most difficult political tests in its 2,000-year history.

Flavours and fragrances

The essence of adaptability

FRAGRANCE AND flowers have always been part of the Provençal image. Lavender and rose, mimosa and jasmine have traditionally permeated the atmosphere of the Riviera, even though they have often had in recent years an increasingly difficult time competing with the smell of suntan oil or car exhausts, especially during the crowded summer season.

But they are not only a decorative component of the local landscape. They have long constituted an important ingredient of the Riviera's economy and have played a significant role in France's export-orientated luxury goods industry.

For generations, the town of Grasse, in the hills behind Cannes and Antibes, has been synonymous with perfume. Indeed, Grasse has always been called the world capital of perfume, although the title these days has become somewhat honorary as a result of the major

changes and evolutions that have taken place during the past few years in the scent business.

But Grasse and the French Riviera still provide many of the essences used by the famous perfume makers like Dior or Yves Saint Laurent. Grasse, whose traditional activities in fragrance have suffered from high labour costs and competition from large lower-cost suppliers like India, has also been increasingly moving into the closely-related food flavouring business.

Between them, the food flavouring and perfume industries of the area employ about 2,500 people in about 30 companies, including subsidiaries of larger specialty chemicals groups, generating sales of about FF2.5bn a year.

Food flavouring today accounts for about a third of this total and this activity is growing at an annual rate of 15 per cent. And as part of the region's efforts to

develop new high value added activities, Grasse is planning a 20-acre development designed primarily for specialty chemicals companies.

Among the large groups which have invested in Grasse is Sanofi, the pharmaceutical and perfume subsidiary of Elf-Aquitaine, the French state-controlled oil group. Sanofi has also invested directly in the Riviera flower growing industry by acquiring an important stake in Barberet-Blanc, the world's leading producer of carnations. Based in Antibes, Barberet-Blanc is also close to another famous name in the flower business, Meilland, a family-owned company founded over a century ago which claims to have created one in three of the roses sold throughout the world.

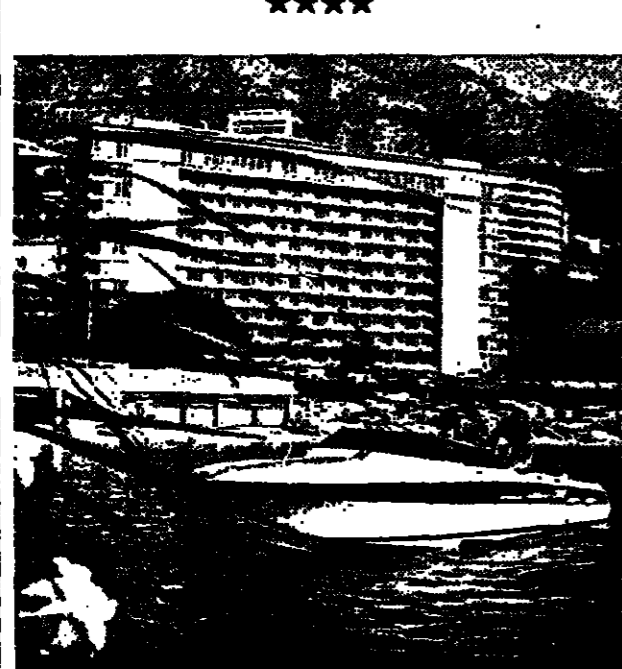
Sanofi decided to invest in the flower business as part of its overall efforts to build up its biotechnology activities, especially in fields like additives and fla-

vours as well as seeds and food products. It was interested in Barberet-Blanc because the Antibes flower grower has developed a major expertise in test tube or *in vitro* propagation techniques over the last few years.

Barberet-Blanc has also conducted successful experiments to create new carnation varieties resistant to a fungus called *fusicium oxysporum* which has destroyed entire plantations of carnations in the past.

Sanofi is just one example of the ties that large industrial groups are now increasingly forging with small high technology enterprises to help boost the future development of these smaller concerns and their specific technological know-how. At the same time, the arrival of large groups in the area has provided a stimulus to the region's traditional fragrances and flower sector by providing new openings in markets and technologies.

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SOUTHERN FRANCE 3

Perrier

A spring never runs dry

THE CONVENTIONAL wisdom is that the French are great wine drinkers. That was true a few years ago, but today, although any self-respecting Frenchman still has a bottle of wine on the dinner table, consumption of wine and spirits has declined dramatically.

Indeed, water has now replaced wine as the country's most popular drink. And the French, who guzzle litres of bottled spring water every year, have now exported their water drinking craze abroad.

Synonymous with this success of water over wine is Perrier, whose spring at Vézère near the city of Nîmes has been spilling out its naturally sparkling water since the days of Caesar and Hannibal.

Perrier has undoubtedly done more than any other French company to put French bottled water on the international map. But the commercial and business success of Perrier, which has grown into one of the leading groups in the French food sector, happened by chance.

It all started exactly 40 years ago when Mr Gustave Leven, a Paris stockbroker, was looking for a buyer for the spring then owned by British interests. On his way to the South of France, he decided to stop over and visit the spring at Vézère.

"I had telephoned Sam Bronfman, the Seagram chairman, whom I knew quite well, and asked him if he was interested in the spring," Mr Leven, who is now 73, recalled in a recent interview. But the head of the Canadian drinks group did not appear terribly keen.

Although they favoured the famous club-shaped Perrier bottle at the very beginning of this century, the British owners of the famous spring never exploited Perrier's potential. Mr Leven says when he first visited the plant at Vézère, it was a shambles. There was broken glass everywhere. Everything was done by hand. "But I immediately thought this was a golden opportunity," he said.

The logic of the deal was of biblical simplicity. "It struck

me that all you had to do was to take the water out of the ground and then sell it for more than the price of wine or oil. I decided to buy the business myself and never sell it again," he explained.

After buying the spring with four good friends in 1948, Mr Leven, who still actively runs the company, set about building up Perrier into a multinational business. The spring, which employed 1,000 people to produce about 10m bottles a year in 1948, was already producing 150m bottles by 1962. Mr Leven launched an ambitious programme of heavy industrial investments at Vézère, including the construction of a large modern bottling plant as well as a glass manufacturing facility to integrate completely production and introduce maximum automation.

Mr Leven wanted to control the entire manufacturing process to gain maximum cost efficiency. The results have been spectacular. Perrier today still employs only about 1,500 workers directly in its sparkling water operations but outputs at Vézère has shot up to about 1.5m bottles a year.

At the same time, Mr Leven started to turn his attention increasingly to export markets, with an eye especially on the US. Despite the strong doubts of market analysts, Mr Leven was convinced that Perrier had great potential across the Atlantic. After successfully marketing his little green bottles with the slogan "the champagne of table waters" in France, Perrier was launched with great snob appeal in America as France's "naturally sparkling water."

The success was enormous. Perrier today accounts for about 85 per cent of all imported water in the US. To strengthen his company's position in the US market, Mr Leven has acquired a series of American springs.

In France, Perrier also owns a number of other important springs including the still waters of Contresville and Volvic. The company has also moved into the UK market, where Mr Leven sees promising prospects, by acquiring Buxton spring in Derbyshire.

But its sparkling water spring of Vézère in southern France remains the crown jewel of the company whose total annual sales have now reached the FF1.2bn level.

Mr Leven believes the outlook remains bubbly for the mineral water business. There is never any recession in his market, he claims, adding that even at times of economic recession demand for mineral water has continued to expand steadily. "In 40 years," he says, "we have always been short of stock at Perrier."

The transformation of Nice

Californian parallels

NICE, these days, is no longer a classless version of Bournemouth. The bustle of traffic, the noise of landing jets at the nearby international airport and the rattle of seemingly permanent construction work has overwhelmed the palm-lined *Promenade des Anglais*, overlooking the *Baie des Anges*, where a car park has now replaced the deckchairs.

The provocative red domes of the Hotel Negresco, said to have been inspired by the breasts of a famous belle-époque belle, struggle to preserve some of the city's vanishing Edwardian nostalgia.

But Nice seems to have no complexes about its transformation during the last 25 years from a well-known but fading tourist resort and a magnet for pensioners from France and abroad into a modern metropolis.

In 1986, Nice had a population of barely 200,000 inhabitants. The figure has since grown to 450,000. And what is significant is that more than 25 per cent of its population is under the age of 25 while pensioners account for about 20 per cent, which is well above the national average of 13 per cent.

Under the leadership of its powerful and highly controversial mayor, Mr Jacques Médecin, Nice has become an important high tech business centre while developing and adapting its traditional tourist sector to the changing needs of consumers.

"We now see ourselves as the capital of the California of Europe," says Mr Thierry Martin, agency set up in 1983 by Mr Médecin to promote the region's ambitions to become France's scientific and high technology hub.

The annual revenues generated by the region's new industrial, high tech and scientific activities have now overtaken the combined annual turnover of the tourist and convention business totalling about FF10bn a year.

The electronics and data processing sector now accounts for about FF4bn in annual revenues and employs about 10,000 people. Speciality chemicals represents FF2.1bn in annual turnover and employs more than 5,000 people. And, of the other new activities, bio-engineering and marine research produces more than FF2bn a year and 10,000 jobs.

This evolution began in the early 1960s when Texas Instruments, the US semiconductor group, moved in at Villeneuve-Loubet, near Nice. It became the first American high tech com-

pany to locate a production plant on the French Riviera.

The following year, IBM chose La Gaude, on the heights overlooking Nice, for its research centre. Others followed and in 1969 the Sophia Antipolis science high tech park was founded between Nice and Cannes.

"Sophia Antipolis has acted as a magnet for new high tech investments in our area as well as boosting the region's new image," says Mr Médecin in the offices of the regional council near the city's international airport. "We have plans to develop more science parks in the region," he adds.

Apart from the natural environment of the Riviera and its temperate climate, the international airport of Nice has played a major part in the development of the city during the last two decades. Traffic at the airport, where a second terminal was recently completed, rose to 4.5m passengers last year and an estimated 5m passengers this year. Extensive international connections and a shuttle service with Paris have helped attract major foreign groups to the area.

Large international companies which have invested in the region appear to have no regrets over their moves. Dow Chemical claims that its productivity has increased by 30 per cent since coming to Nice. At IBM, the company claims that one of their problems is that managers and engineers are reluctant to leave after being posted for a few years to La Gaude.

The diversification into high tech sectors has also been matched by intensive office building development in the area. Opposite the airport, for example, construction is now well advanced on a new business centre called Armas. A large business convention centre, new hotels and cultural facilities as well as the restoration of the old city centre have all been part of the efforts to modernise and adapt Nice to the changing character of its growing population.

This process, Mr Médecin claims, has been relatively smooth. "Barely 128 years after we became French - remember we belonged to Italy until then - we are now regarded as one of the most dynamic regions of France," the right-wing mayor says with a characteristic lack of modesty. But Mr Médecin acknowledges that Nice also has its share of urban problems.

For the past 20 years, Mr Médecin, a former French tourism minister and a deputy for the Gaullist RPR party at the National Assembly, has run the city with an iron fist after succeeding his own father as mayor.

Mr Médecin's extrovert Mediterranean style leaves few people indifferent. He has made as many enemies as friends. His critics accuse him of being an accomplished political wheeler-dealer who has created an all-powerful political machine to keep him in charge of the city. Mr Médecin dismisses these attacks as a permanent guerrilla war by his left-wing political opponents and the Socialist press to try to undermine his position in the city.

He has no qualms about speaking his mind on highly controversial issues like immigration and drugs. "If we had not adopted a policy to prevent the concentration of North African immigrants in the old city centre, the old quarter would have become by now an Arab souk like at Marseilles," he says.

Although Nice has traditionally had a large North African population, it has never had the same problems as Marseilles as a result of the city's efforts to avoid concentrations of immigrant populations in any given part of the city.

Despite its new business and industrial activities, unemployment remains high in the area at 11.5 per cent, or more than 1 per cent above the national average.

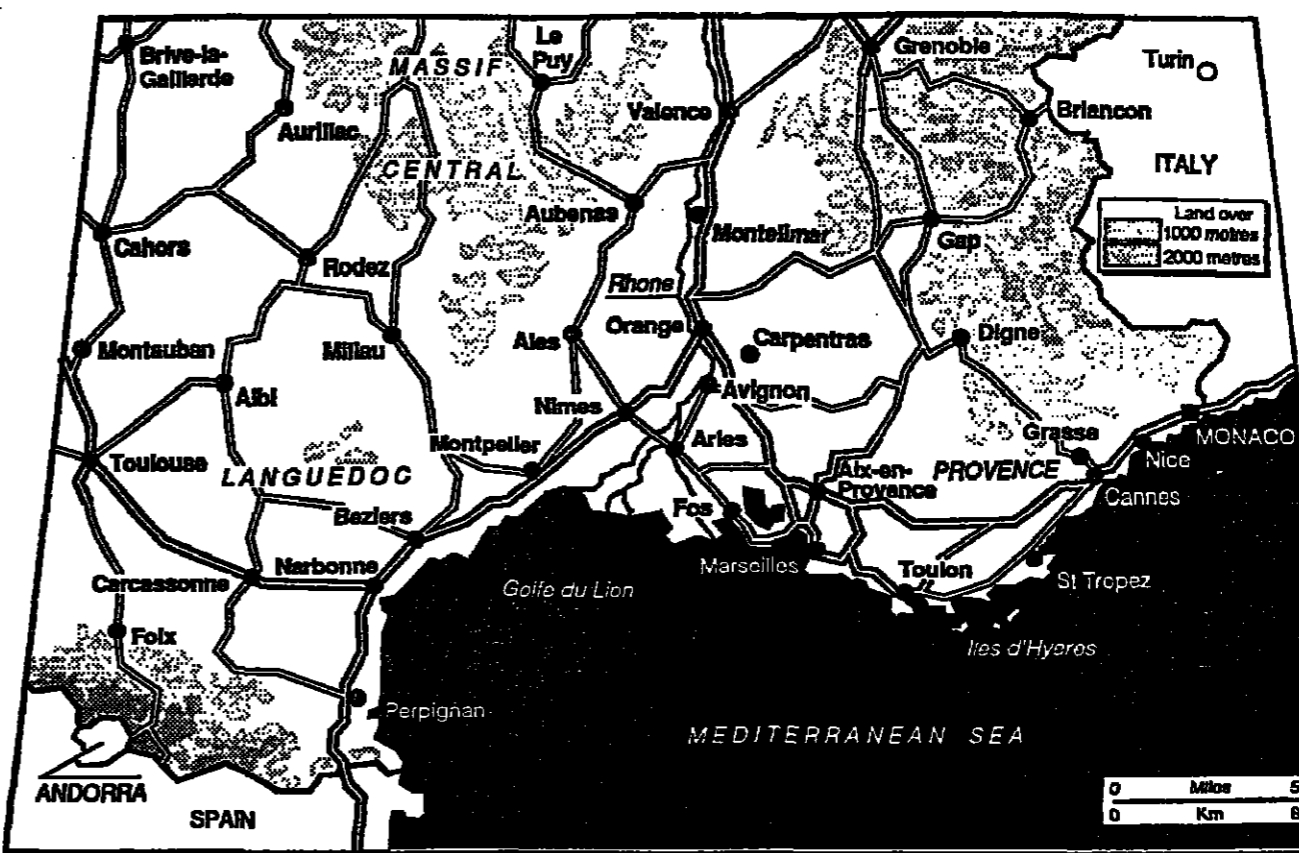
But the figure is distorted by the fact that the city and the region suffers from an imported unemployment problem. Many people from other regions come

down here to look for a job because if you are going to be unemployed you might as well be unemployed in the sunshine. We call them *les chômeurs au soleil*," he explains.

Other problems are drugs and crime. Nice's geographic position, its international airport and port facilities, have turned it into a significant transit centre for the international drug trade. Mr Médecin has sought to clamp down on local crime and the drug business by intensifying security in the city. In his typically outspoken way he says that when drug dealers are caught they should be given an overdose of their drugs in front of television cameras for all to see.

Drugs and crime as well as a highly publicised "casino war" have on occasion given Nice a bad image in France as "a Chicago of the Mediterranean," according to one long-time resident. The casino war, which involved a ferocious battle for control of the city's major gambling facilities worthy of a B-movie crime serial, has been grist to the mill of Mr Médecin's opponents.

But Mr Médecin shrugs off these criticisms just as he does the rise of the extreme right National Front in the region. In Nice, he is still a popular political figure and his power base remains secure. "Whether you like him or not, approve or disapprove his town hall style of politics, most people in this city think he has done a good job for Nice and the region," says a businessman whose sympathies lie more on the left than towards Mr Médecin's right-wing RPR camp.



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SOUTHERN FRANCE 4

Tourism, the region's backbone, is adapting to changing tastes

Getting away from the coast

EVER SINCE the British and then the Russian aristocracy discovered it in the 19th century, the South of France has enjoyed a reputation as one of the world's leading tourist spots. "It is undoubtedly a star and like all stars it has its qualities and its faults," remarks Mr Dominique Charpentier, head of the regional tourist bureau in Nice, sitting in his office overlooking the Promenade des Anglais.

"The British became a dominant power down here during the last century," he adds. Lord Brougham launched Cannes in 1854 and the British colony in Nice 10 years later inspired the construction of the famous Promenade des Anglais.

Twenty years later, it was the turn of the Société des Bains de Mer (SBM) and its roccoco casino to launch Monte Carlo as a fashionable and leading gambling resort. But the South of France with its blue sea and its picturesque villages in the hills of Provence was also discovered by the great Impressionist painters at around the same time and has continued to inspire artists from the world over.

The South of France was at first a winter resort. Its moderate climate attracted a cosmopolitan mix of visitors and residents during the winter months, and it was only after the Second World War that summer replaced winter as the big season.

"The Americans brought with them the cult of sun and sea," says Mr Charpentier. "And the French, who now also had annual paid holidays, started flocking to the south in the summer months."

But in the face of the growth of international tourism and the development of new resorts in Spain and Italy, not to mention Greece and North Africa, the South of France has started to come under increasing competition. This competition has

become even more acute with the development of low cost air travel which has opened up to mass tourism distant sand and sun resorts in the Caribbean, the Pacific and Indian Oceans.

Despite the increasingly competitive environment and the changing tastes and habits of consumers, the South of France has successfully managed to adapt its tourist sector which remains one of the backbones of the regional economy.

Tourism generates about FF11bn in annual revenues in the Provence-Côte d'Azur area. It has continued to grow in economic importance not only in the seaside resorts along the Riviera from Menton, near the Italian border, to St Tropez, but also in the hinterland and along the coast of Languedoc-Roussillon to the Spanish border.

The region has also made a big effort to diversify tourism by developing winter sports in the Alps and in the Pyrenees where there are now 17 winter sports resorts including three internationally known ones, Isola 2000, Valberg and Auron. In the hinterland, so-called *tourisme vert* or "green tourism" has also been developed with an increasing number of farm houses or *gîtes* available for holiday rentals and additional hotels in the countryside and mountains of southern France.

This inland development is expected to continue with new facilities like golf courses and horse riding schools for a rising number of holiday-makers anxious to avoid crowded summer beaches. "The coast is reaching saturation point," acknowledges Mr Charpentier. "This is why we have a strategy of anticipating the future by investing more and more in inland areas."

This trend has also encouraged many more foreign tourists to visit several remarkable towns of southern France like Avignon, Arles, Nîmes, Carcassonne, Aix

Monaco

New image for a city state

THE WRITER Somerset Maugham described Monte Carlo as a sunny place for shady people. But that was long ago and things have moved on since then.

Prince Rainier told me last year that he would like to be remembered one day as the man who corrected the bad image and legends of his tiny sovereign state. For generations, the picture postcard principality has been regarded as a tax haven and gambling paradise with its famous casino and luxury hotels attracting grand dukes and Greek shipping tycoons.

But this impression has now changed, even though the principality of Monaco continues to attract world headlines as a result of the irresistible combination of its fairy tale setting, the Hollywood glamour of the late Princess Grace and her daughters, its famous grand prix and car rally and its jet set image.

During the 39 years he has run Monaco, Prince Rainier has successfully transformed and modernised the principality from a fading gambling resort into a diversified and thriving business and tourist enterprise. He has turned the principality with its 28,000 inhabitants into an affluent city state, which not only continues to remain a shelter for wealthy foreign tax exiles but has also become the home for a growing number of small industries and service businesses, as well as a large banking sector.

The old myths have been tumbling down as the economy of the principality, once based practically solely on tourism and gambling, has expanded and diversified into new sectors. Gambling today accounts for barely 4 per cent of the principality's annual budget. In its *bell'epoque* heydays at the end of the last century it accounted for as



Prince Rainier (left) with President Mitterrand of France

much as 95 per cent of the country's annual receipts.

During a recent visit, two crocheters were lamenting that even the wealthy Arabs had now deserted the green tables and that all the big business was in Las Vegas-style slot machines. These days, the biggest contribution to the FF72bn annual state budget comes from value-added tax receipts which account for as much as 55 per cent of revenues.

But even though the authorities like to play down Monaco's tax haven image, the source of great irritation on the part of France in the past, its favourable fiscal climate has undoubtedly contributed to the success of its economic development.

After a major clash with the French authorities in 1983, a tax convention was signed between France and Monaco. Under the agreement, all French nationals residing in the principality after 1987 had to pay French income tax. But the one of the early 1980s with France is now long buried and relations today between the two countries could not be more amicable.

The tax convention preserved the tax advantages for Monegasque nationals and foreign non-French residents since they continued to benefit from the absence of income tax as well as other taxes like capital gains and corporate tax if not more than 25 per cent of a company's turnover was done outside Monaco.

Although the principality levies indirect taxes and a 35 per cent corporate tax on companies whose turnover outside the principality exceeds 25 per cent of its total sales, it remains, in the words of a local businessman, "a tax-efficient centre."

This fiscal system has not only continued to attract wealthy foreign residents, who in turn have

Helped to transform the principality into a significant offshore banking centre, as the Monegasque authorities would wish. The decision rests with France, since Monaco comes under the jurisdiction of the Banque de France and its foreign exchange controls.

The principality has put a lot of work into building up special attractions like the international tennis and golf tournaments as well as the traditional car races. Cultural events and festivals have also helped sustain tourism even though the decline of the dollar and the fall in the number of big-spending American tourists have had an adverse impact.

Nevertheless, Monaco, with its international image and its more rounded economy, has proved more resilient than most to the dollar's slump.

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SAT RESIDENCE

Wine-growing

Nice rosé turns more aggressive

Cleaning a wine slurry out near Perpignan

THE MIDI, as the South is known in France, has always been a prolific wine producer. Wine has for generations been an integral part of the culture, politics, history and economy of a region where a great many people still own a few acres of vines and devote their weekends to tending their grapes.

But wine has also given the Midi, and especially the Languedoc-Roussillon region, a growing headache in recent years. Squeezed by changing consumer drinking habits and increasing competition from other low cost wine producers, like Spain or Italy, the Midi wine sector has faced a crisis which some have gone as far as comparing to that which hit the steel industry in the north a few years ago.

The problem is that the Midi has long been the main French producer of cheap table wine, or "vin ordinaire," whose market has suffered from the combination of declining demand and excessive production. The average Frenchman today drinks about 30 to 40 litres less table wine a year than he did 20 years ago. At the same time, the Midi, which accounts for at least two-thirds of French table wine production, is probably one of the regions most vulnerable to the recent entry of Spain into the European Community.

But Spanish entry into the EC could turn out to be not only a threat but also an opportunity and challenge for the rural regions of southern France to improve their wine producing and marketing methods. At least, that is what Mr Raymond Barre,

Sunbelt at a crossroads

Continued from Page 1

traditional parties of the right have had to make local political alliances with the National Front to retain power. And these associations have inevitably helped the extreme right-wing party to gain a measure of respectability and credibility in the area.

The rise of the National Front in the south has posed a new headache for the region. Many local and foreign businessmen interviewed expressed undisguised concern over the implications of the National Front assuming a major role in the political management of many key centres of the Midi.

For this reason, the Socialist Party hopes to capitalise on Francois Mitterrand's landslide victory in the presidential election to create a democratic front to prevent Mr Le Pen from gaining further ground in the south.

It is no accident that Mr Bernard Tapie, the French entrepreneur who has built up a business empire by taking over and turning around bankrupt companies, has decided to run in the parliamentary elections in Marseille. Mr Tapie, a popular figure in the city since taking over the local first division football team, declared that he decided to enter the political contest to counter the local ambitions of the National Front. His decision to run also reflects Mr Mitterrand's and the Socialist Party's efforts to extend their electoral base to the centre.

Whatever the outcome of this month's legislative election and

and their own government. But they have become increasingly alarmed by the EC's efforts to reform its costly wine regime and curb production.

The traditionally militant wine-growers of the Midi were again up in arms a few weeks ago following the latest plans from Brussels to introduce a more restrictive price regime. To appease them, the government extended some additional hand-outs to French wine-growers by introducing measures designed to reduce the debt interest payments. The authorities have also encouraged wine-growers to uproot their vines to replant their land with fruit and vegetables.

Although prospects remain uncertain for the region's wine industry, some recent efforts to improve quality and marketing are starting to pay. In the Var, for example, the growers have now forged closer ties to launch a major marketing campaign to improve the international image of the wines of Provence.

"We've always been stuck with the image of the nice little rosé served well chilled in the summer," remarks one grower from the St Tropez area at a meeting in Paris organised by Var wine-growers to promote their different wines. "Production is now becoming much more professional and the Var is producing increasingly good quality wines. And there is no reason why we cannot try to market our wines as successfully as the people in the Beaujolais have done in recent years," he added.

Since the growers organised themselves more coherently and efficiently, wine exports from the Var have doubled. Perhaps even more significantly, this particular area has attracted increasing interest from foreign investors. Between 20 and 25 wine-growing estates have been acquired recently by a wide range of foreign investors from West Germany, Belgium, Denmark, Sweden, the US and Japan.

"In most cases, they have bought properties involving about 30-40 hectares. It has been a recent and encouraging phenomenon since it should greatly help improve our international image and visibility," according to a regional banker based at Aix-en-Provence.

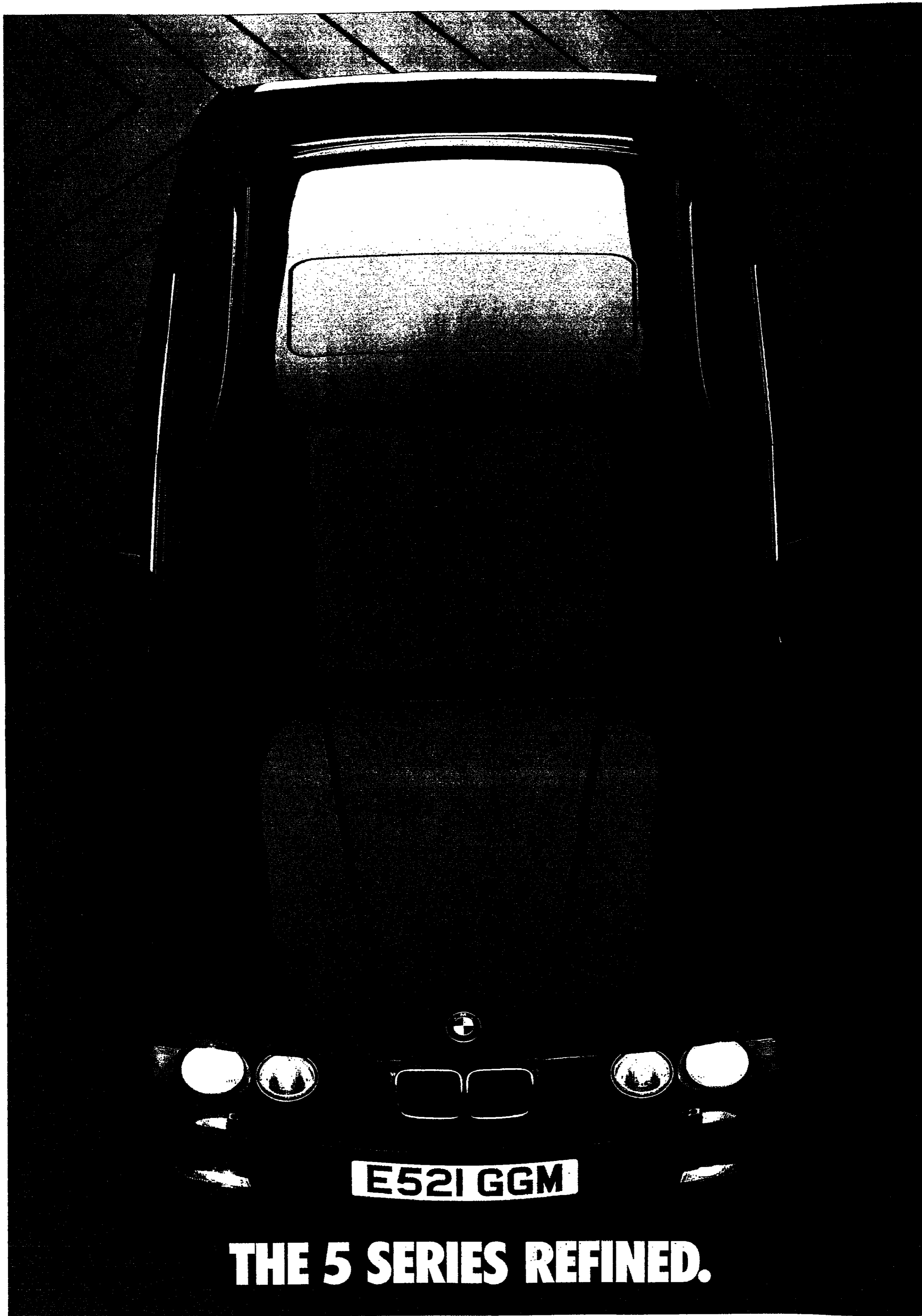
A very large proportion of wine-growers in the Midi are not full-time wine producers. A recent study showed that of the 74,000 wine-growers of both the Languedoc and the Provence-Côte d'Azur regions supplying local co-operatives, only 44 per cent relied entirely on this occupation for their livelihood.

Moreover, three out of five wine producers are aged 55 or more and only one out of 16 is under 35. In the circumstances, it is not difficult to see why local wine production has such trouble to organise and regroup itself efficiently to improve quality and shift the emphasis towards exports to compensate for the fall in domestic consumption of ordinary wine.

The wine-growers of the Midi, who have always had an important and vocal voice in the politics of the region, have also relied heavily in the past on support from the European Community

next year's municipal polls, southern France will have to continue addressing, in months to come, its local political problems, which reflect the complex realities and social and economic difficulties of the area.

The region has already successfully started to adapt and transform its economy to changing circumstances. The first fruits of its economic diversification policy and the modernisation of its economic and urban structures are beginning to produce results. It now faces the challenging task of accelerating these efforts in a new and more complicated political climate which has placed the international spotlight on this large and varied region of France.



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And at the top of the range, a 3.5 that will take the car from 0 to 60mph in just 7.7 seconds.

All four are fuel injected. And they each incorporate a computerised engine management system that constantly 're-tunes' the engine for optimum performance.

The car will also calculate its own service intervals. And memorise any engine fault, no matter how fleeting, then report it on its next visit to a BMW service bay.

But it is the engine's performance not its practicality that will attract the keen driver.

It certainly attracted the man from 'Motor'.

"Throttle response is super-crisp and entirely consistent but most impressive is undoubtedly that superlative mechanical smoothness."

Excellent though the individual components of the 5 Series are, it was the car as a whole that impressed 'Motor' most.

"Its real achievement is in the completeness of its abilities, its depth of talent. BMW's standards appear to march forward irrespective of model range or price."

Over the last 4 years BMW invested 4 million man hours in the development of this new 5 Series. And they drove prototype cars and tested components over 2.9 million miles.

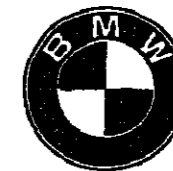
(The equivalent of driving around the world one hundred and sixteen times.)

The car that has emerged packs more advanced technology per square inch than any BMW before. Driving it, however, provides some good old-fashioned rewards.

"The 525i is sporty and civilised, fast and economical, well put together and relatively affordable, comfortable and fun to drive."

"This is a sports car dressed as a family saloon, a driving machine which does not sacrifice creature comfort."

These paragraphs represent 'Car's' verdict. BMW now await yours.



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THE NEW 5 SERIES RANGE FROM £15,985 FOR THE 520I TO £24,995 FOR THE 535ISE. PERFORMANCE FIGURE SOURCE: MANUFACTURER. PRICES, CORRECT AT TIME OF GOING TO PRESS, EXCLUDE DELIVERY AND NUMBER PLATES. FOR A NEW 5 SERIES INFORMATION FILE OR TO ARRANGE A TEST DRIVE, PLEASE WRITE TO: BMW INFORMATION SERVICE, PO BOX 46, HOUNSLOW, MIDDLESEX OR TEL: 01-897 6665. FOR TAX FREE SALES, TEL: 01-629 9277.

Some people, it seems, can work absolutely anywhere.



1. A splash of inspiration.

Everyone knows how the Greek mathematician Archimedes made a great discovery in his bath and then ran naked through the streets of Syracuse shouting, "Eureka!" (I have found it!) At first, it was not clear what he had grasped — except that it had apparently displaced a large volume of water — but Archimedes' Principle soon became universally recognised. (This has since been superseded by Alexander Graham Bell's Corollary, which states that when a body is immersed in water, the phone will ring.)

However, it is not widely known that Archimedes often used to work in unusual places. Indeed, whenever he had bathed, he would cover himself with olive oil and draw mathematical diagrams on his skin with a fingernail. In 212 B.C., the Romans captured Syracuse — and the 75-year-old scholar was found performing calculations in the dust. A Roman soldier stepped on them, causing him to exclaim angrily, "Don't disturb my circles!" — which in turn so enraged the soldier that he drew his sword and killed him on the spot.

Unfortunately, Archimedes left no record of where he perfected his screw.

2. Fellow swimmers.

Archimedes was by no means the only person to make a discovery in the bath. In 1978, the French pop singer Claude François discovered that it is not a good idea to change light bulbs while standing in the bath — and promptly became the late Claude François.

Another singer who had a rather happier time in the tub was the great operatic tenor Enrico Caruso. He used to practise in the bath (often twice a day), following the score on a specially-fitted music stand while a pianist accompanied him from just outside the door.

The actress Sarah Bernhardt was less modest. She used to make stage plans with managers and authors present in the room as she bathed. However, she did take the precaution of sprinkling powdered starch in the water to make it opaque, which gave rise to the legend that she bathed in milk.

While we are in the bathroom, it appears that few people in history have worked on the toilet, but the man who perfected the flushing loo must have had his seat on the seat for some time in the course of his research. His name was Thomas Crapper.



3. Granny Smiths and gravity.

Sir Isaac Newton, arguably the greatest mathematician to have lived since Archimedes, seems to have shared the Greek's ability to work anywhere. In fact, Newton himself considered this to be the secret of his success. When asked how he had been able to make so many pioneering discoveries in astronomy, he replied, "By always thinking about them."

His dedication to science became apparent at a very early age. When his uncle sent him out to graze the sheep, he would often be found later reading under a hedge, quite oblivious of the sheep that had wandered off. Yet far from being angry, his uncle was impressed enough to send him to Cambridge.

In 1665, however, the university was forced to close by the Great Plague, so Newton returned to his mother's house at Woolsthorpe in Lincolnshire. It was while he was sitting in the orchard there that a falling apple led him to discover the law of gravitation — which came as a blow to many people who had been floating around quite happily until then.

On another occasion, Newton invited a friend to dinner, but was so engrossed in his work at the appointed hour that he noticed neither his friend's arrival nor his meal being served in front of him. Rather than let it go cold, the friend ate the scientist's dinner — and when the latter finally broke off from his meditation, he looked in astonishment at his empty plate. "If it were not for the proof before my eyes," he said, "I could have sworn that I have not yet dined."

4. No rest in the restaurant.

The composer Johann Strauss II was also given to working at the dinner-table. He wrote his 'Accelerations Waltz' on the back of a menu in a Vienna restaurant, and so exasperated his wife with his habit of composing instead of conversing at meal-times that she left him.

Sir Henry Royce, partner of Charles Rolls, is known to have had at least one working lunch in a London restaurant. All through his meal, he was irritated by a creaking trolley. He said nothing at the time — but when the waiter cleared the table, he found a sketch of a new design for the wheels.

Picasso used his sketching ability somewhat more profitably. He would pay for dinner by doodling on napkins and autographing them, which is certainly preferable to doing the washing-up.

5. Getting rich in the kitchen.

Over the years, there has been no less activity in the kitchen than at the dinner-table. The French philosopher René Descartes apparently used to meditate inside a stove.



George Eastman developed the first successful dry plate for photographers among the dinner-plates in his mother's kitchen and went on to begin the Eastman Kodak Company.

Harriet Beecher Stowe was once found kneading dough while holding a pencil between her teeth. She was using every spare moment to write 'Uncle Tom's Cabin', an anti-slavery novel which did much to precipitate the American Civil War.

However, the discovery made in 1845 by the German chemist Christian Schönbein had a more immediate explosive effect. He was experimenting with a mixture of sulphuric and nitric acid when he spilled some on the kitchen table. He duly mopped it up with his wife's cotton apron and hung it in front of the fire to dry. When his

wife returned home, she hit what remained of the roof. Her slightly charred husband had invented gun cotton.

6. Notions in motion.

Friedrich August Kekulé von Stradonitz hardly sounds like the average man on the Clapham omnibus, but that is precisely where he achieved his scientific breakthrough in 1858. While dozing, he dreamt of snakes biting their own tails, thus creating rings — and on awaking, he realised he had discovered the structural formula for benzene which he had been trying to work out for years. With this knowledge, all the facts of organic chemistry known up to that time fell into place.

At least two composers have also worked while travelling by road. While driving to work one morning, George M. Cohan wrote the war song 'Over There', for which he was awarded a special Congressional Medal in 1940.

And Noël Coward was in a taxi caught in a traffic jam when he wrote his popular song 'I'll see you again' — which is a miracle if his driver was whistling out of tune or dozing on about how he once had a trial with Brentford.



7. Tin Lizzie and motor head on tour.

The man who popularized motor transport actually started out in a humble shed. By day, Henry Ford was the chief engineer of a Detroit electrical company, but at night he would work for hours in the shed behind his house, while his wife sat on a box watching him. In May 1896, after three years of hard toil, he had his first car ready to run.

He started the engine — and shot out of the shed, across his wife's prize flower bed and into the clothes-line pole, smashing it to pieces.

Undeterred, Ford went on to pioneer the mass production of motor cars with the Model T assembly line — but even after he had made his fortune, the industrious industrialist kept his mind on business wherever he went.

In the early stages of World War I, he sailed for Europe with other eminent pacifists to appeal for an end to hostilities. The plan failed, and Ford's 'Peace Ship' became known as the 'Ship of Fools', but when he arrived back home just three weeks after he had left, he was unrepentant. "I didn't get much peace," he admitted, "but I learned that Russia is going to be a great market for tractors."

8. Dial-a-Virgin.

The ability to work anywhere seems to be a trait common to all successful entrepreneurs.

In the mid-1960s, a 16-year-old boy decided to start a national student magazine. He had no office, but he drummed up £5000 of advertising for the first issue by finding a phone box, opening the Yellow Pages and selling. Very soon, 'Student' had a circulation of 100,000. At the same time, he started an advice service in the crypt of a church, using a slab of marble across two coffins as a desk.

Today, from his houseboat on a London canal, Richard Branson runs Virgin Records, Virgin Books, Virgin Atlantic and ... actually, why aren't they called Virgin Condoms?

In the 1950s, another member of Workaholics Unanimous took a more direct route into the sex market. Hugh

Hefner put together the first three issues of 'Playboy' magazine on the kitchen table at home — and the printer complained about butter stains on his typed copy sheets. Hm.



9. Nye at night.

Taking work home is often necessary, but it can have drawbacks, particularly for the rest of the family.

Aneurin Bevan, minister of health from 1945 to 1951, brought home a caseful of documents almost every night and worked on them in a small bedroom at the top of the house. One night, after slaving away for hours, he called to his wife to bring up a second batch of papers. "No," she replied. "One you may have. But taking two to bed is positively immoral."

Bevan's Labour colleague Harold Wilson later questioned the value of working all night in this way. "The greatest asset a head of state can have is the ability to get a good night's sleep," he claimed.

Taking your work home is also inadvisable if you happen to work at the Bank of England — but in such a situation, the next section may prove useful.

10. Brain cells.

Working in prison does not necessarily mean the usual occupations of mailbag-sewing and sheet-knotting.

When Charles Goodyear was imprisoned for debt in Paris in 1885, he was allowed to send out for chemicals so that he could continue his experiments on vulcanizing rubber.

Countless writers of conviction have worked on their sentences behind bars, including François Villon, John Bunyan, Voltaire, Thomas Paine, Oscar Wilde, Adolf Hitler, Joe Orton and the ominously-named Charles Bloodgood who wrote a chess textbook ('The Tactical Grob') while in the penitentiary for matricide.

Recently, an increasing number of prisoners have been studying for examinations. (One man actually acquired a total of 49 'O', 'A' and 'S' levels.) However, cynical observers have doubted the value of this trend. When one convicted thief graduated in sociology, it was remarked that, "he'll still nick from anyone — but at least he knows why he does it now."

11. A bed at bedtime.

Nye Bevan's wife may have complained about him working in bed — but what would she have made of the French writer Marcel Proust?



After his mother died, he retreated to his room and stayed in bed for virtually the whole of his last fifteen years. Cork panels were nailed to the walls and ceiling to exclude all noise, dark curtains were permanently drawn across tightly-shut windows to keep out both light and air, and fumigating smoke filled the room to ease his asthma.

Yet it was in this stifling environment that Proust wrote his brilliant masterpiece 'A la recherche du temps perdu'. It is not a directly autobiographical work — but it is clear from the very first line that much of his own experience is incorporated: "Longtemps, je me suis couché de bonne heure."

12. Even Stevenson.

Robert Louis Stevenson was another writer to suffer from respiratory illnesses — but unlike Proust, he roamed far from home.

His story 'The Master of Ballantrae' is remarkable for its evocative descriptions of South-West Scotland, yet it was actually written in America, Hawaii and Tahiti. Similarly, 'Treasure Island' was penned in Switzerland, 'Catriona' in Samoa — while 'Kidnapped' and 'Dr Jekyll and Mr Hyde' were both composed in exotic Bournemouth.

Stevenson even wrote on his honeymoon. One would have thought that he had better things to do, but perhaps these lines from his 'Child's Garden of Verses' express his fears on that subject:

"Must we to bed indeed? Well then, Let us arise and go like men, And face with an undaunted tread The long black passage up to bed."

Still, his wife could not have been less attractive than his companion of 1878. (See 'Travels with a Donkey' (1879).)

13. A master painter.

Between 1817 and 1845, the painter J.M.W. Turner made no less than eighteen journeys abroad, travelling as far afield as Naples, Vienna and Prague. This was quite exceptional, even for a landscape artist, for most of his contemporaries made enough notes for a lifetime's output during one or two continental tours.

His mobility was made possible by the recently-improved road network in Europe — and in fact, Turner once referred to John McAdam, the inventor of tarmac, as the 'Colossus of Roads'. Fortunately for us, though, he concentrated on art rather than humour.

He is known to have sketched while on the move — a fellow-traveller noticed him drawing passing clouds as they crossed the Alps in 1819 — and he obviously worked outside a great deal (his watercolour of Cader Idris is actually spattered with rain).

However, his most unusual workplace by far was on board the steamboat Ariel as it left Harwich one stormy night in 1842. Although he was then 67 years old, he persuaded the sailors to lash him to the mast so that he could observe the scene.

14. The hat on the head of state.

Working in unusual places is all very well — but carrying the relevant notes from place to place can be inconvenient.

Abraham Lincoln solved the problem by keeping his office in his top hat. Whenever he had an idea (on one of his midnight walks around the



White House, for example), he would take a pencil and paper from his hat and write it down on the spot. (He could not use his coat pockets, as his wife had a fetish for white kid gloves and sometimes left six or seven pairs in them.) On his return to his other office, Lincoln would continue his work lying flat on the floor.

Surprisingly, Abe was not the only person to keep things under his hat. His method was also employed by the 19th-century Scottish naturalist Robert Dick.

15. How to run software anywhere.

Of course, you do not need to get a hat to get ahead. You can get the new 16-bit Epson PC Portable instead.

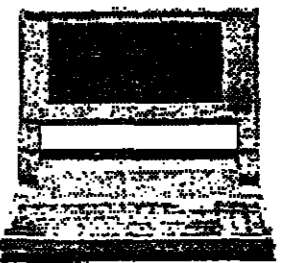
Being battery-powered, it can be used anywhere from bathrooms to boats (and weighing only 11 pounds, it certainly isn't a pain in the arm to carry around) — yet back in the office, it can be linked up with any of your desktop PCs.

It has an integral keyboard and back-lit screen (which has the same number of columns and rows as an ordinary VDU). It is available with twin floppy disk drives or 20Mb of hard disk storage. Moreover, it is exceptionally fast and will run all the leading business software on the market.

Yet for all this, the PC Portable costs only £1395 or £2195 (RRP exc. VAT), which is quite a bit easier on the pocket than certain other 16-bit portables.

To pick up more information on this new Japanese take-away, either write to Epson (U.K.) Limited, Freeport, Birmingham B37 5BR; call up Prestel *280#; or ring 0800 289622 free.

Quite frankly, you would be a 19th-century Scottish naturalist to use anything else.



EPSON

ARTS

La traviata/Cardiff

Max Loppert

The New Theatre, Cardiff has been refurbished - where previously there were cramped foyers and seedy passages, space and light (and decent loos) have been elegantly acquired. Inside, there is a smart new plan desk and, on Saturday, a new Welsh National Traviata that showed the company in characteristically adventurous form.

denuded of realistic detail. It is a production of great boldness, and even in those moments where (to a prosily literal-minded observer) its effects jar with the text or with Verdi's libretto instructions, one senses its taut conceptual intelligence behind it.

Jenufa/The Place

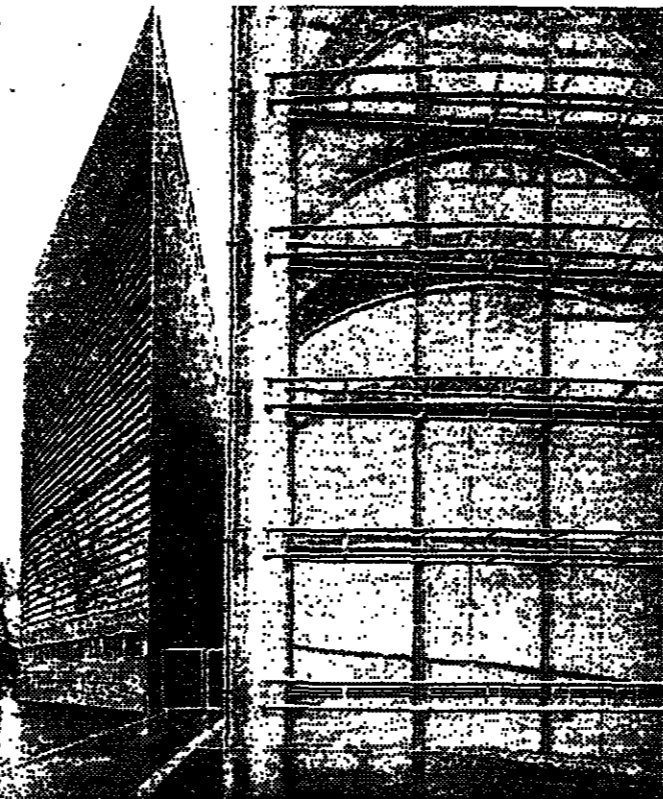
Rodney Milnes

Scottish Opera Go Round's production of Jenufa was first performed in the Autumn of 1986, and news of its exceptional qualities soon filtered south of the border.

due first and foremost to Brenda Hurley, whose fearless, technically bravura playing almost persuaded one that the full colour of a Janáček orchestra was there - a stunning achievement.

Architecture/Colin Amery

Experimenting with space



Jean Nouvel's elegant buildings for the Institute of the Arab World in Paris

There is a wonderful opportunity in London at the moment to see a masterpiece of contemporary architecture by one of France's leading architects. Little known outside his own country and exhibiting for the first time in the UK, it is right to call Jean Nouvel a polemical innovator.

His work is firmly in what we now have to call the Modern tradition, but he simply does what any serious architect does: he explores his brief and utilises every opportunity for innovation and experiment. Because his architecture uses the vocabulary of high tech it would be easy to include him among the older architects like Norman Foster or Richard Rogers, but in fact he is much more experimental.

to have broken through one of the major barriers of modern design. He has made the functional elements, the machine-made parts of his building, gel into something which is poetically beautiful and innovative.

building with its pointed prow of such elegance makes somewhere like the exterior of London's Lloyds Building look like the unsophisticated work of a child. Working in the great tradition of Chareau, Jean Nouvel is clearly a master. The coarse old fashioned Modernism-turned-Beaux Arts that he led the arts establishment into battle with the Government over its inadequate funding.

Times In It/Abbey, Dublin

Michael Coveney

With the long forgotten (now we know why) Irish Restoration comedy St Stephen's Green continuing on the Abbey's main stage, the curtain of the subsidiary Peacock theatre was rung down on Saturday night on three superb short new plays by Frank McGuinness.

Airport, in Enniskillen ("Let me live among my dead") and lovely England. Its rhythmic chant, echoing the supplications of the Catholic liturgy, conveys an unquenchable, hermaphroditic commitment to the spirit of Mother Ireland in the wake of recent incidents and outrages.

directs the explosively funny Brides of Lachybeg. A gay teacher, Tommy (Peter Holmes), who has lost his job, berates another patriarchal tyrant, Garces (Miss Tol, resident in her Carmen costume), for coming too noisily to his public defence.

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FINANCIAL TIMES

Europe's Business Newspaper

Arts Guide

June 3-9

- MUSIC LONDON: Diana Cotras (soprano) with Georg Fendler (piano). Wigmore Hall (855 2141) (Mon). Suk Chamber Orchestra from Prague, directed by Josef Suk, violin: Kieran Harcourt, piano: Cesar Franck, Ravel, Beethoven/Liszt. Wigmore Hall (Wed).

Sponsorship

The appeal of opera

Antony Thornecroft

By far the most interesting dramatic performance of recent weeks was the debut on Tuesday of the general director of the Royal Opera House, Covent Garden, Mr Jeremy Isaacs. His first public vision of the future was the perfect juxtaposition of Sir Peter Beaux Arts that he led the arts establishment into battle with the Government over its inadequate funding.

Mr Isaacs basically said that he could not envisage any rise in public subsidy in the foreseeable future, so the arts just had to shift for itself. This meant securing higher box office revenue and more money from individual and corporate sponsors. Between 1983 and 1990 Covent Garden's subsidy would reduce to 45 per cent. And by 1990 its revenue from sponsors was scheduled to double, to 10 per cent.

But it is not only business that is being courted. Arts bodies are starting to appreciate that there is more personal wealth sloshing around. The British Museum, which is taking a measured approach to raising outside money, is pursuing the idea of private supporters, and Covent Garden is developing a product to appeal to rich individuals who would enjoy being patrons of the opera. It is the American way - although there are much bigger tax advantages there.

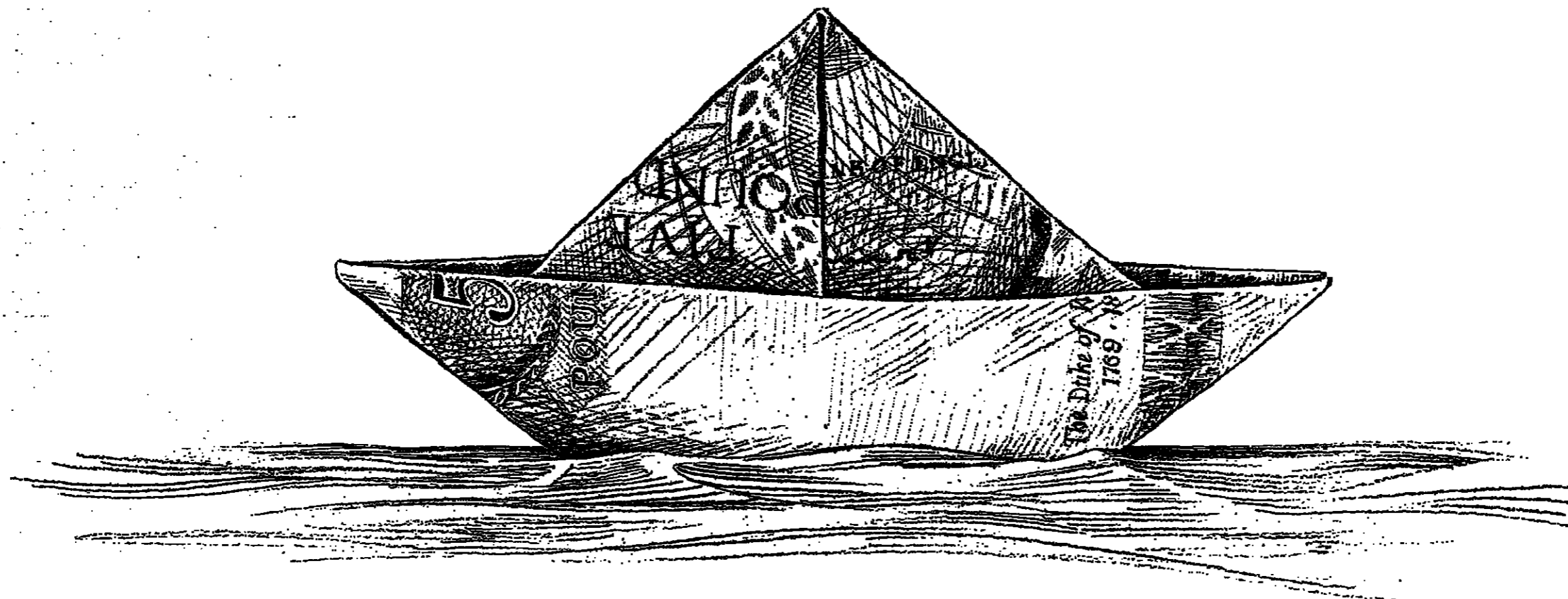
Opera has always appealed to sponsors. It has created two of the longest love affairs in the business. The Midland Bank's aid for the Covent Garden proms, which over seventeen years has pumped more than £1m into the Opera House, and Amoco's ten-year support of the Welsh National Opera which, by paying for advertising and marketing, will enable it to present Falstaff at Covent Garden in October.

Saleroom/Antony Thornecroft

King Billy memento

King William III is not held in great reverence by the Irish, at least not by those living south of the border, so Christie's has something of a rarity on its hands tomorrow when it is offering a "Williamite" glass probably made in Dublin around 1720.

- AMSTERDAM: Dietrich Fischer-Dieskau. Concertgebouw. Accompanied by Hartmut Holl: Schubert (Mon) The Wind Ensemble of the Orchestra of the 12th Century: Mozart (Wed) (716 345).



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SECTION II - COMPANIES AND MARKETS FINANCIAL TIMES

Monday June 6 1988



INTERNATIONAL BONDS

AIBD papers over some of the cracks in the houses

THE Eurobond market is dead. Long live the Eurobond market! The relief was palpable at the end of the Association of International Bond Dealers (AIBD) meeting in Dallas last week...

The Trax project represents the single most important step in the Eurobond market's slow and reluctant move to co-operate with the new spirit of regulation sweeping through global markets...

Trax pilot phase later this year. Euroclear's lobbying proved powerful and it looked as if the AIBD board would be forced to call an extraordinary general meeting...

brokerage firms suspected of overreaching themselves. His intervention, coupled with a powerful speech from Mr René Jaquet, AIBD vice chairman, appeared to sway the audience...

Mr Donald Regan, former White House Chief of Staff and Treasury Secretary, in his keynote speech to the conference. However, several dealers questioned the feasibility of true liquidity in a market such as the Eurobond market...

clear. A board invitation to discuss rationalisation plans in current pinched circumstances met with a stony silence from the floor. Nevertheless, more concrete concerns such as the anticipated cost of Trax, were not dealt with...

Arab investment group set to win control of Gucci

BY ALAN FRIEDMAN IN MILAN

INVESTCORP, the international investment bank founded in 1982 as a conduit for private Arab investment in Western industry, is close to taking effective control of Gucci, the luxury Italian maker of handbags, shoes, clothes and fashion accessories...

representatives on the eight-member Gucci board, has not yet revealed itself, either in public or to Mrs Maria Martelli, the chairman appointed last August by the custodians of Mr Maurizio Gucci's 50 per cent shareholding...

CREDITS

Bankers play their part in helping to thaw East-West relations

AS THE Soviet and US leaders talked last week of a new spirit of friendship between East and West, Western bankers were playing their part in helping to thaw the Cold War.

to the banks than in the country's last big financing, raised a year ago, which carried the 12% margin throughout the 10 years. In southern Europe, Portugal is thought to be close to announcing a Eurocommercial paper programme...

what above those being mooted some weeks ago. There is a 6% basis point commitment fee. In the UK, National Westminster Bank arranged a £200m multi-option facility (MOF) for Bins Circle Industries, the building materials concern...

any day of the Mickey Mouse financing that is not for the EuroDisney leisure park outside Paris. There has been fierce competition to win the mandate for the financing, of around FF1.8bn, and the suggestion last week was that Banque Nationale de Paris had emerged as the winner.

while has lined up a string of banks to provide sizeable chunks of finance, but is unlikely to make a formal syndication. Kansallis-Osake-Pankki became the first Finnish borrower with a medium-term note programme, for \$250m, arranged by Warburg Securities, with Merrill Lynch and Shearson Lehman Hutton also appointed as dealers.

Two Japanese borrowers established Eurocommercial paper programmes. Marubeni, the trading company, established a \$200m programme through Yamaichi International.

Table with columns: Primary Market, Secondary Market, Currencies, Values. Includes data for US\$, DM, SF, etc.

MORGAN GRENFELL UNIT TRUSTS advertisement. Includes text: Morgan Grenfell offers four unit trusts... UK Equity Income Trust, American Growth Trust, International Growth Trust... 01-826 0123

Advertisement for Kerr-McGee Corporation and Kerr-McGee Oil (U.K.) PLC. Includes text: U.S. \$200,000,000, Guaranteed by Credit Suisse First Boston Limited, list of banks and managers.

This announcement appears as a matter of record only.

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| Crédit Commercial de France | Goldman Sachs International Corp. |
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New Issue

12th April, 1988

ECU 150,000,000



European Investment Bank

7½ per cent. Bonds due 1996

Issue Price 101¾ per cent.

Union Bank of Switzerland (Securities) Limited

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5th May, 1988

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New Issue

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Can. \$300,000,000



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9½% Series 4 Notes, Due 1993

Issue Price 101¾%

Union Bank of Switzerland (Securities) Limited

- | | | |
|--|--|---|
| Crédit Lyonnais | Dresdner Bank Aktiengesellschaft | |
| Generale Bank | Hambros Bank Limited | |
| Merrill Lynch International & Co. | Nomura International Limited | |
| RBC Dominion Securities Inc. | Salomon Brothers International Limited | |
| Wood Gundy Inc. | | |
| Julius Beer International Limited | Borus Fry Limited | Chase Investment Bank |
| Lévesque, Beaubien Inc. | Manufacturers Hanover Limited | McLeod Young Weir International Limited |
| Merck, Finck & Co. | Richardson Greenshields of Canada (U.K.) Limited | |
| Schweizerische Bankgesellschaft (Deutschland) AG | Schweizerische Hypotheken- und Handelsbank | |
| Verins- und Westbank Aktiengesellschaft | | |

Sound Diffusion restructure and reorganisation

By Philip Coggan

Sound Diffusion, electrical equipment leasing group, will today announce a comprehensive restructuring and reorganisation package, following a complete review of the group's operations by the new management.

WCRS expands via Taiwan deal

By Fiona Thompson

WCRS, the advertising agency, has extended its Pacific Basin operations through an acquisition in Taiwan. It has purchased an initial 40 per cent interest in Intelligent Advertising Agency and plans to acquire a further 40 per cent in five tranches of 8 per cent each.

Australian fund lifts water company stake

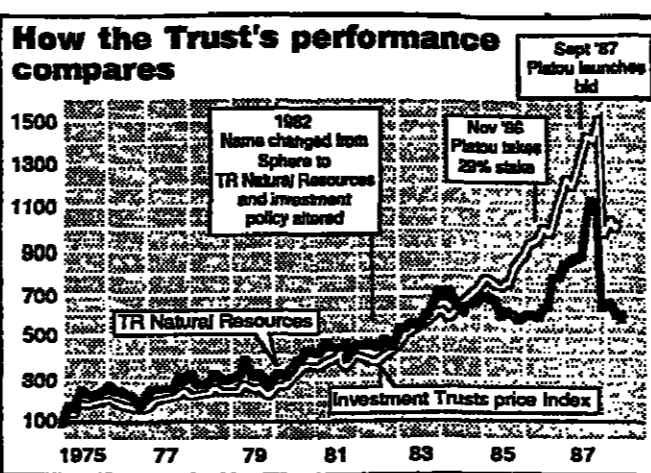
Associated Insurance Pension Fund has increased its stake in Mid-Sussex Water Company from 18.7 to 17.2 per cent of the voting capital.

FT Share Service

The following securities were added to the Share Information Service in Saturday's edition:

Nikki Tait on the controversy surrounding the proposals by TR Natural Resources Minority squeezed into unenviable position

Upheavals in the investment trust sector are scarcely news these days and changes afoot at TR Natural Resources, an £88m fund and still nominally part of the Touche Remnant stable, might normally pass with little comment.



Quite why TRNR ever wanted this wider investment freedom is a mystery. "You may well ask what the point of the change was," says Mr Pease, adding firmly that no specific investments had been lined up.

Perkins buys shellfish supplier

Perkins, a USM-quoted food company, has bought the Sefton Meadow Group, a shellfish supplier, for a maximum of £2.08m.

COMPANY NEWS IN BRIEF

BARBICAN HOLDINGS, the industrial property and services company that was recently quoted under rule 535 (2), has joined the Third Market.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends.

PENDING DIVIDENDS

Table with columns: Date, Announcement year, Date, Announcement year. Lists various companies and their dividend dates.

Rockwood acquisition

Rockwood Holdings, the USM-quoted group with interests in distribution services, electronic components and security consultancy, has acquired the Walford Meadows Group of companies, a wood's international distribution leading international freight forwarder for an initial £5m.

Advertisement for First Leisure Corporation PLC, featuring a logo and text: '£50,000,000 Sterling Commercial Paper Programme Arranged by Hill Samuel & Co. Limited'.

Advertisement for ALUMINIUM, 'The Financial Times proposes to publish this survey on 26th October 1988'.

Advertisement for NORTHAMPTONSHIRE, 'The Financial Times proposes to publish this survey on 22nd June 1988'.

Advertisement for SWEDEN, 'The Financial Times proposes to publish this survey on: June 16th'.

Advertisement for U.S. \$100,000,000 The Export-Import Bank of Korea Floating Rate Notes due 1995.

Advertisement for TOPS SERIES III LIMITED, 'U.S. \$110,000,000 Series III Floating Rate Trust Obligation Participation Securities due 1992'.

Advertisement for Notice of Early Redemption U.S. \$300,000,000 Ireland Floating Rate Notes due 1994.

Advertisement for BfG Finance Company B.V., 'U.S. \$100,000,000 FLOATING RATE NOTES'.

Advertisement for GRANVILLE SPONSORED SECURITIES, listing various securities with prices and yields.

Advertisement for BankAmerica Corporation, 'U.S. \$400,000,000 Floating Rate Subordinated Capital Notes Due 1987'.

Advertisement for Provinsbanken A/S, 'U.S. \$60,000,000 Floating Rate Capital Notes 2000'.

Advertisement for Crown Communications Group PLC, 'INTRODUCTION to the Unlisted Securities Market'.

Advertisement for U.S. \$50,000,000 IBM Credit Corporation Floating Rate Yen Linked Notes due 1995.

Advertisement for U.S. \$50,000,000 IBM Credit Corporation Floating Rate Yen Linked Notes due 1995.

Advertisement for BfG Finance Company B.V., 'U.S. \$100,000,000 FLOATING RATE NOTES'.

Table titled 'FINANCIAL TIMES STOCK INDICES' showing various indices like Government Secs, Fixed Interest, Ordinary, Gold Mines, FT-Act All Share, FT-SE 100 for June, May, and April 1988.

FT UNIT TRUST INFORMATION SERVICE

AUTHORISED UNIT TRUSTS

Table listing various unit trusts such as Abbey Unit Trust, Anthony White Unit Trust, Arkwright Management, and others, including their names, managers, and performance metrics.

Table listing unit trusts including Bannockburn Management Co Ltd, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

Table listing unit trusts including Baxendale Unit Trust, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

Table listing unit trusts including Baxendale Unit Trust, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

I.G. INDEX LTD, 9-11 GROSVENOR GARDENS, LONDON SW1W 0BD. Includes contact information and a small table with dates and values.

JOTTER PAD. A grid for notes with columns for date, time, and a large empty space for writing.

FT CROSSWORD No. 6,648 SET BY TANTALUS. Includes a crossword puzzle grid and a list of clues for across and down words.

Table listing unit trusts including Baxendale Unit Trust, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

Table listing unit trusts including Baxendale Unit Trust, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

Table listing unit trusts including Baxendale Unit Trust, Baxendale Unit Trust, Baxendale Unit Trust, and others, with columns for name, manager, and performance.

Handwritten text at the bottom of the page: "Vehicle 1250"

FT UNIT TRUST INFORMATION SERVICE

Company Name	ISIC	Current Price	Change
Prudential Life & Pensions Ltd	0251	125.5	0.0
Prudential Mutual Life Ass. Co Ltd	0252	125.5	0.0
Prudential Assurance Co Ltd	0253	125.5	0.0
Prudential Overseas Fund	0254	125.5	0.0
Prudential Overseas Fund 2	0255	125.5	0.0
Prudential Overseas Fund 3	0256	125.5	0.0
Prudential Overseas Fund 4	0257	125.5	0.0
Prudential Overseas Fund 5	0258	125.5	0.0
Prudential Overseas Fund 6	0259	125.5	0.0
Prudential Overseas Fund 7	0260	125.5	0.0

Company Name	ISIC	Current Price	Change
Scottish Life Assurance Co Ltd - Cont.	0261	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0262	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0263	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0264	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0265	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0266	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0267	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0268	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0269	125.5	0.0
Scottish Life Assurance Co Ltd - Cont.	0270	125.5	0.0

Company Name	ISIC	Current Price	Change
Standard Life Assurance Co Ltd	0271	125.5	0.0
Standard Life Assurance Co Ltd	0272	125.5	0.0
Standard Life Assurance Co Ltd	0273	125.5	0.0
Standard Life Assurance Co Ltd	0274	125.5	0.0
Standard Life Assurance Co Ltd	0275	125.5	0.0
Standard Life Assurance Co Ltd	0276	125.5	0.0
Standard Life Assurance Co Ltd	0277	125.5	0.0
Standard Life Assurance Co Ltd	0278	125.5	0.0
Standard Life Assurance Co Ltd	0279	125.5	0.0
Standard Life Assurance Co Ltd	0280	125.5	0.0

Company Name	ISIC	Current Price	Change
Westminster Life Assurance Co Ltd	0281	125.5	0.0
Westminster Life Assurance Co Ltd	0282	125.5	0.0
Westminster Life Assurance Co Ltd	0283	125.5	0.0
Westminster Life Assurance Co Ltd	0284	125.5	0.0
Westminster Life Assurance Co Ltd	0285	125.5	0.0
Westminster Life Assurance Co Ltd	0286	125.5	0.0
Westminster Life Assurance Co Ltd	0287	125.5	0.0
Westminster Life Assurance Co Ltd	0288	125.5	0.0
Westminster Life Assurance Co Ltd	0289	125.5	0.0
Westminster Life Assurance Co Ltd	0290	125.5	0.0

OFFSHORE INSURANCES

Company Name	ISIC	Current Price	Change
Offshore Insurance 1	0291	125.5	0.0
Offshore Insurance 2	0292	125.5	0.0
Offshore Insurance 3	0293	125.5	0.0
Offshore Insurance 4	0294	125.5	0.0
Offshore Insurance 5	0295	125.5	0.0
Offshore Insurance 6	0296	125.5	0.0
Offshore Insurance 7	0297	125.5	0.0
Offshore Insurance 8	0298	125.5	0.0
Offshore Insurance 9	0299	125.5	0.0
Offshore Insurance 10	0300	125.5	0.0

OFFSHORE AND OVERSEAS

Company Name	ISIC	Current Price	Change
Overseas Investment 1	0301	125.5	0.0
Overseas Investment 2	0302	125.5	0.0
Overseas Investment 3	0303	125.5	0.0
Overseas Investment 4	0304	125.5	0.0
Overseas Investment 5	0305	125.5	0.0
Overseas Investment 6	0306	125.5	0.0
Overseas Investment 7	0307	125.5	0.0
Overseas Investment 8	0308	125.5	0.0
Overseas Investment 9	0309	125.5	0.0
Overseas Investment 10	0310	125.5	0.0

UK LISTED

Company Name	ISIC	Current Price	Change
UK Listed Fund 1	0311	125.5	0.0
UK Listed Fund 2	0312	125.5	0.0
UK Listed Fund 3	0313	125.5	0.0
UK Listed Fund 4	0314	125.5	0.0
UK Listed Fund 5	0315	125.5	0.0
UK Listed Fund 6	0316	125.5	0.0
UK Listed Fund 7	0317	125.5	0.0
UK Listed Fund 8	0318	125.5	0.0
UK Listed Fund 9	0319	125.5	0.0
UK Listed Fund 10	0320	125.5	0.0

Handwritten note: 10/10/10

FT UNIT TRUST INFORMATION SERVICE

Table of FT Unit Trust Information Service listing various investment funds, their managers, and performance metrics.

LONDON SHARE SERVICE

Table of London Share Service listing British Funds, Foreign Bonds & Rails, and Americans.

Table of Money Market Trust Funds and Money Market Bank Accounts.

LONDON SHARE SERVICE

AMERICANS - Contd

Table listing American companies such as IBM, AT&T, and General Electric with their share prices and market data.

CANADIANS

Table listing Canadian companies such as Alcan, Inco, and Northern Telecom with their share prices and market data.

BANKS, HP & LEASING

Table listing financial institutions and leasing companies such as Citicorp, Citicredit, and Finance Trust.

BEERS, WINES & SPIRITS

Table listing beverage companies such as Heineken, Carlsberg, and Diageo with their share prices.

BUILDING, TIMBER, ROADS

Table listing construction and infrastructure companies such as Bovis Lend Lease and Bovis Lend Lease.

BUILDING, TIMBER, ROADS - Contd

Continuation of Building, Timber, Roads companies including Bovis Lend Lease and Bovis Lend Lease.

CHEMICALS, PLASTICS

Table listing chemical and plastic companies such as ICI, Shell Chemicals, and Hoechst.

DRAPERY AND STORES

Table listing retail and drapery companies such as Debenhams and Debenhams.

BUILDING, TIMBER, ROADS

Continuation of Building, Timber, Roads companies including Bovis Lend Lease and Bovis Lend Lease.

DRAPERY AND STORES - Contd

Continuation of Drapery and Stores companies including Debenhams and Debenhams.

ELECTRICALS

Table listing electrical companies such as British Telecom and British Telecom.

DRAPERY AND STORES

Continuation of Drapery and Stores companies including Debenhams and Debenhams.

ENGINEERING

Table listing engineering companies such as BAE Systems and BAE Systems.

ENGINEERING - Contd

Continuation of Engineering companies including BAE Systems and BAE Systems.

ENGINEERING - Contd

Continuation of Engineering companies including BAE Systems and BAE Systems.

FOOD, GROCERIES, ETC

Table listing food and grocery companies such as Unilever and Unilever.

HOTELS AND CATERERS

Table listing hotel and catering companies such as Whitbread and Whitbread.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INDUSTRIALS (Misc.) - Contd

Continuation of Industrial (Misc.) companies including British Airways and British Airways.

INSURANCES

Table listing insurance companies such as Prudential and Prudential.

LEISURE

Table listing leisure companies such as Virgin Atlantic and Virgin Atlantic.

Handwritten text at the bottom of the page, possibly a signature or note.

LONDON SHARE SERVICE

LEISURE - Contd

Table of Leisure companies including B.A. Plastics, B.P. Petroleum, and others with columns for stock price and dividends.

PAPER, PRINTING, ADVERTISING - Contd

Table of Paper, Printing, and Advertising companies including B.P. Petroleum, B.A. Plastics, and others.

TEXTILES - Contd

Table of Textiles companies including B.P. Petroleum, B.A. Plastics, and others.

TRUSTS, FINANCE, LAND - Contd

Table of Trusts, Finance, and Land companies including B.P. Petroleum, B.A. Plastics, and others.

OIL AND GAS - Contd

Table of Oil and Gas companies including B.P. Petroleum, B.A. Plastics, and others.

MINES - Contd

Table of Mines companies including B.P. Petroleum, B.A. Plastics, and others.

MOTORS, AIRCRAFT TRADES

Table of Motors and Aircraft Trades companies including B.P. Petroleum, B.A. Plastics, and others.

Commercial Vehicles

Table of Commercial Vehicles companies including B.P. Petroleum, B.A. Plastics, and others.

Garages and Distributors

Table of Garages and Distributors companies including B.P. Petroleum, B.A. Plastics, and others.

NEWSPAPERS, PUBLISHERS

Table of Newspapers and Publishers companies including B.P. Petroleum, B.A. Plastics, and others.

PROPERTY

Table of Property companies including B.P. Petroleum, B.A. Plastics, and others.

TOBACCO

Table of Tobacco companies including B.P. Petroleum, B.A. Plastics, and others.

TRUSTS, FINANCE, LAND

Table of Trusts, Finance, and Land companies including B.P. Petroleum, B.A. Plastics, and others.

OVERSEAS TRADERS

Table of Overseas Traders companies including B.P. Petroleum, B.A. Plastics, and others.

PLANTATIONS

Table of Plantations companies including B.P. Petroleum, B.A. Plastics, and others.

Rubbers, Palm Oil

Table of Rubbers and Palm Oil companies including B.P. Petroleum, B.A. Plastics, and others.

FINANCE, LAND, etc

Table of Finance, Land, etc companies including B.P. Petroleum, B.A. Plastics, and others.

MINES

Table of Mines companies including B.P. Petroleum, B.A. Plastics, and others.

THIRD MARKET

Table of Third Market companies including B.P. Petroleum, B.A. Plastics, and others.

NOTES

Notes section containing various financial announcements and reports.

PAPER, PRINTING, ADVERTISING

Table of Paper, Printing, and Advertising companies including B.P. Petroleum, B.A. Plastics, and others.

SHIPPING

Table of Shipping companies including B.P. Petroleum, B.A. Plastics, and others.

SHOES AND LEATHER

Table of Shoes and Leather companies including B.P. Petroleum, B.A. Plastics, and others.

SOUTH AFRICANS

Table of South African companies including B.P. Petroleum, B.A. Plastics, and others.

TEXTILES

Table of Textiles companies including B.P. Petroleum, B.A. Plastics, and others.

OIL AND GAS

Table of Oil and Gas companies including B.P. Petroleum, B.A. Plastics, and others.

Central African

Table of Central African companies including B.P. Petroleum, B.A. Plastics, and others.

Finance

Table of Finance companies including B.P. Petroleum, B.A. Plastics, and others.

REGIONAL & IRISH STOCKS

Table of Regional and Irish Stocks including B.P. Petroleum, B.A. Plastics, and others.

TRADITIONAL OPTIONS

Table of Traditional Options including B.P. Petroleum, B.A. Plastics, and others.

FINANCIAL TIMES SURVEY



The issue of open systems has profound implications for computer users and suppliers alike.

Suddenly, strategic alliances are being forged between traditional competitors and the structure of the industry looks set for irrevocable change, says Alan Cane.

Potent force for progress

COMPUTING STANDARDS, to paraphrase Mr Kenneth Olsen, president of Digital Equipment Corporation (DEC), are about as exciting as a Russian truck. Indeed, many of those who have laboured over the past three decades on the thousands of documents involved in standards specification may wonder what Mr Olsen has against Soviet vehicles.

But if standards are not exciting, they have nevertheless a power to change the pattern of competition within an industry and to lower the barriers to entry which makes them profoundly important.

That is why standards, and especially open standards, have become the hottest issue in the computer industry and beyond. Bankers, retailers and manufacturers are discussing standards with an intensity and concentration usually reserved for commercial strategy and tactics.

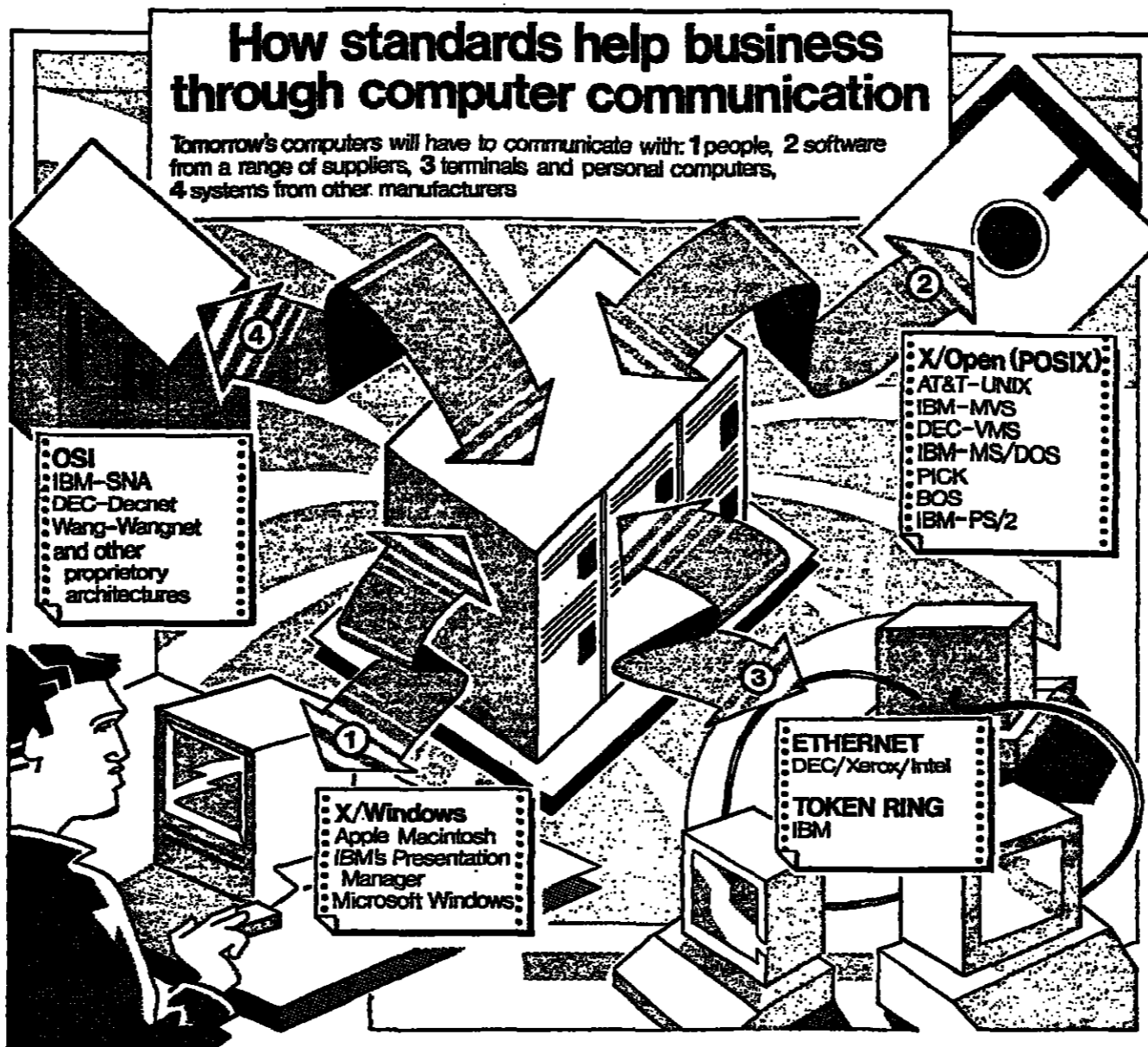
They are the driving force behind a rash of new, sometimes bizarre, business alliances. Who would have predicted a year ago, for example, that the chief executives of deadly competitors like International Business Machines and Digital Equipment Corpora-

tion would sit together on the same platform last month to pledge allegiance to a standard - the Unix operating system - which, in truth, both would rather have seen remain in obscurity?

They are also the principal reason why, for virtually the first time in the history of the computer industry, large customers such as governments, armed forces and aerospace companies are calling the shots, warning suppliers who refused to co-operate in meeting common standards that they will be shut out of important contracts.

The issue has been forced by patterns of development in modern business computing. The isolated data centre housing one or more mainframe computers is giving way to a form of distributed computing where a variety of different kinds of computer, each with appropriate power for its users needs, is linked together into networks.

According to some estimates by the mid-1990s there may be one billion computers around the world, all connected into one network or another. Without common interconnection methods there will be the electronic equiv-



□ In each standards' area, the emerging and preferred standards are shown in bold type; other contenders appear in lighter type.

Open systems

alent of the Tower Of Babel.

Many customers are well aware, furthermore, that no one supplier can meet all of their hardware and software requirements. They want, therefore, to be able to mix-and-match equipment in corporation-wide networks.

But equally they are attracted by the idea of one-stop shopping for their information systems, which is why the fastest growing form of computing services company these days is the "systems integrator," with the special skills needed to be able to take equipment from a variety of suppliers and tie it into a single, networked system.

Open standards, obeyed by the majority of hardware and software suppliers, are seen as the key to simplifying systems integration.

In principle, computer industry standards are very simple; only the detail is complex. And that complexity is not helped by a tendency, almost a compulsion, on the part of those individuals and organisations involved in standards to cloak their activities in codes and acronyms - TC97, SC2, JTC1, X.24, LU6.3 and so on - more suited to secret societies than to business organisations.

At their simplest, computing standards deal with the four directions in which data process-

ing system have to communicate - with each other, with software programs, with human beings and with networks of terminals, workstations or personal computers. (as illustrated on this page).

The most developed of these standards deal with the first direction, how computers communicate with computers of the same make and with computers from other manufacturers. Each of the major manufacturers has tackled this through a proprietary design or architecture - the oldest and best-known is International Business Machine's Systems Network Architecture (SNA). It defines exactly what has to be done to ensure that one

IBM machine can "talk" to any other IBM computer.

In the past few years, every other major manufacturer, fearing that IBM would force the universal acceptance of SNA as a *de facto* standard, has united behind an international standard, Open Systems Interconnection (OSI), a universal set of rules for the connection of machines of different manufacture.

In the US, this commitment has been realised as the Corporation for Open Systems (COS), a consortium now 84 members strong. A principal role for COS and for SPAG, its European equivalent, is to establish tests for conformance to the OSI rules.

The setting of a standard: the realisation of the dream of 'computer glasnost'. Testing compliance and certification: not an easy task. 2

MAP and TOP - the manufacturing automation protocol and the technical and office protocol: a make or break week in Baltimore? 3

Why is this important? There are seven 'layers' or functional divisions within OSI defining everything from the shape of the connecting pins to the way a section of text is handled in passing from one system to another. Thousands of rules are involved, and each has to be obeyed precisely if communication is to be successful.

Furthermore, many of the rules can easily be interpreted in different ways. If, therefore, communications between two machines using an OSI link fails, it can be difficult, if not, impossible to apportion blame for the failure. Conference testing is therefore the only guarantee a customer has that a system labelled "OSI" will, in fact, behave according to the rules.

OSI rules are being developed by a joint technical committee of the International Standards Organisation and the International Electrotechnical Commission and are virtually complete.

Evidence of the progress made is the Enterprise Networking Event '88 International (ENE) which opens today in Baltimore, US - a demonstration that open systems are ready to be used in the real world. Basically a manufacturing operation, ENE will demonstrate two important derivatives of OSI-MAP (Manufacturing Automation Protocol) and TOP (Technical and Office Protocol).

MAP and TOP emerged as the result of initiatives on the part of General Motors and Boeing Corporation, respectively - groups which have been demanding that their computing suppliers obey open systems rules if they expect to win contracts with them.

The UK is participating in ENE through sponsorship by the Department of Trade and Industry and co-ordination by the Production Engineering Research Association (PERA).

Its contribution, a "jobbing shop," involves six small and medium-sized companies in the computer integrated manufacturing (CIM) field - CS Consultants, CS Developments, Cimtel, Kewill, Ferranti International, Reflex and Sydney Communications.

According to Mr Malcolm Millington, Pera's CIM manager, ENE is important for three reasons.

□ It brings together as sponsors customers - as the 1,500

The adoption of standards by top companies in Europe: new evidence of commitment. The impact of public and private standards groups: an unstoppable momentum in one way. The IBM standard in the spotlight: two major strategies. European Pavilion at the Enterprise Networking Event (ENE '88): PERA personalities at Baltimore. 4

strong MAP/TOP user group - and vendors - the Corporation for Open Systems.

□ The sheer scale of the exhibition: nine separate booths bringing together equipment from 56 separate vendors, is on a size never seen before.

□ All the vendors will be showing products based on a new version of MAP, MAP Version 3, that will not be tampered with for six years, giving customers a guarantee of continuity and protecting their investment in MAP-based systems.

Mr Millington says: "MAP V3 has been the target for everybody. It promises the customer an intelligent network that will look after itself."

The emergence of OSI as a settled standard means also that the OSI/SNA debate is, for all practical purposes, over. IBM will stick with SNA but communicate with other systems through OSI gateways - high speed translation devices. Technology has caught up with the politics.

The hottest area of the standards debate, however, concerns operating systems, the software computers need to regulate their internal workings and more significantly - to interact with software applications programs.

For reasons more to do with history than technology, the favoured system is called Unix, developed over a decade ago AT&T, the US telecommunications giant. AT&T licenses the design principles of this system to other users, many of whom have developed their own versions - Digital Equipment's Ultrix, Microsoft's Xenix and so on.

The whole computing world - customers, hardware suppliers and software suppliers alike - would be best served by agreement to a single, common version of Unix. This is the aim of the X/Open group, a consortium of users and suppliers (but excluding IBM). It wants to establish a "common applications environment" called Posix which would ensure that all computers look alike to applications software.

Earlier this year, AT&T upset the computing world by agreeing to work with Sun Microsystems, an aggressive workstation vendor, to develop a definitive Unix.

IBM, DEC, Hewlett Packard

Continued on page 3

PERA TOTAL CIM CAPABILITY

PERA offers impartial, practical advice on all technical and commercial aspects of Computer Integrated Manufacturing

PERA **AWARENESS** - in the form of ComCentre, the UK Centre for communications standards which gathers and disseminates information to industry on worldwide communications standards

PERA **CONSULTANCY** - in Production Management (MRP, JIT, OPT), Computer Applications, Electronics and Systems Design

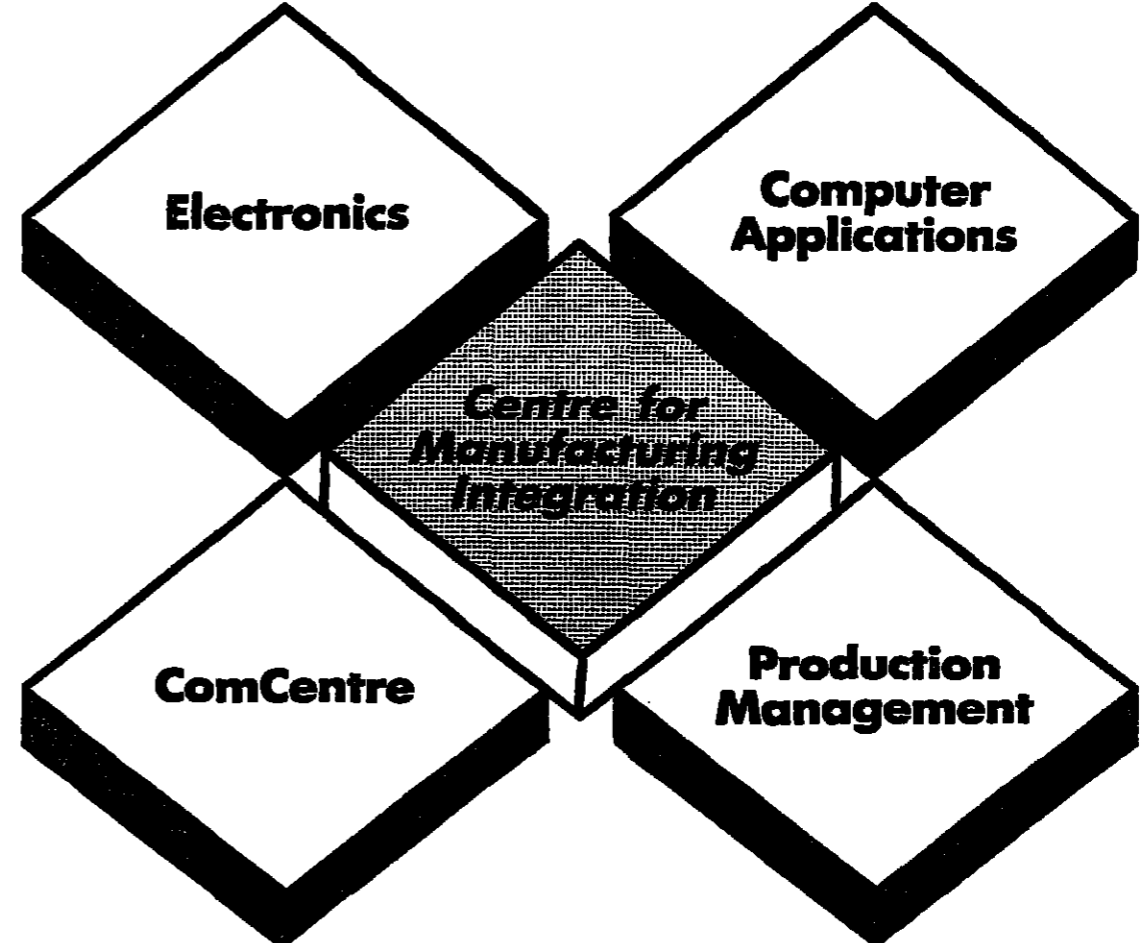
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Vision and other measurement techniques as part of your manufacturing and quality control systems

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Malcolm Millington, Manager CIM, PERA, Melton Mowbray, Leicestershire LE13 0PB.
Telephone 0664 501501
Fax 0664 501264
Telex 34684 Peramm G

OPEN SYSTEMS 2

The setting of a standard

Aiming for a 'computer glasnost'

MORE THAN in any other industry, manufacturers of computer systems have resisted standardisation.

Since its very beginnings, the computer industry has been an umbrella name for a whole set of sub-industries with separate, exclusive cultures and different priorities. The only thing the various suppliers have in common is that they all sell computer systems to "solve problems."

Each sub-industry offers a set of components, which are internally consistent, but seldom compatible with those offered by other branches of the computer industry. This has created a situation where users of computers are divided and unable to put sufficient pressure on their suppliers to conform to industry-wide standards.

Hardware suppliers have exploited this situation by making their systems "proprietary", that is, unlike anyone else's system.

As long ago as the 1960s, it was recognised that industry-wide standards, rather than constraining the industry, would aid expansion. If users could exercise choice over hardware and software purchases, without fear of being 'locked' in to proprietary computer systems, then they could concentrate their efforts on building their applications.

The first attempt to achieve this focused on programming languages and the Cobol language in particular. Cobol became an international standard in the 1960s and most manufacturers adopted it (mainly because the US Government, which was



John L. Doyle, head of the Open Software Foundation. He is on secondment from Hewlett-Packard, where he is executive vice president, systems technology sector.

at this time the world's largest computer-user, decreed Cobol was mandatory for government contracts).

But although Cobol was 'standardised', each manufacturer was allowed to enhance the language in its own way and the result was that a Cobol program written for one computer could not be run on another without changes. Computer users were still 'locked' in to proprietary systems.

Through the 1970s, the gradual evolution of networks of computer systems, made the problem of industry standards even more pressing. While computers operated in isolation, the only reason for building systems around universally-accepted standards was to allow users to move to other computer hardware - a factor which unsurprisingly met with little enthusiasm from hardware manufacturers.

But when networks came along

during the 1970s, hardware manufacturers had an incentive to conform to a 'connection' standard. It gave them a chance to sell their wares to customers who had traditionally bought everything from another supplier.

Some of these 'connection' standards evolved as *de facto* industry standards as a result of the market dominance of a particular manufacturer - usually IBM. The 2740 and 3370 terminal standards, which were devised by IBM for its proprietary products, gained such a critical mass of acceptance in the industry, that they were universally adopted by all manufacturers.

By the beginning of the 1980s, networks had proliferated at such a rate that a formal standard, which could cover every aspect of network 'connectivity' from the physical technology used to connect hardware, through to the way applications behaved in the network, became a necessity.

The International Standards Organisation (ISO), in consultation with computer manufacturers and telecommunications companies, introduced a framework for future development of network systems. It was called the ISO Open Systems Interconnection (OSI) model and comprised seven distinct 'layers' or levels of connection.

The layers allowed for 'connectivity' both to layers above and below and to equivalent layers in other models. The lowest level, physical connection, for example, defined the way that devices are connected to each other and the interface to the next level up - the Data Link layer.

The data link layer definition specifies connections to other data link layers and the interfaces to the physical layer below and the network layer above it, and so on.

The seven-layer model is, of necessity, vague in terms of the detailed specification of how each layer works. It is up to the individual manufacturer how the model is implemented as long as the appropriate interface standards are adhered to.

In principle, the model has been accepted by the whole industry and, in the long term, it will lead to a realisation of the dream of completely open systems - a sort of computer 'glasnost'.

The problem is that some manufacturer's networking plans were well advanced when the ISO OSI standard was first drafted. IBM, for example, announced its System Network Architecture (SNA) - its model for computer networking - in the mid-1970s.

SNA was effectively superseded last year with the introduction of Systems Application Architecture (SAA), which extends and embraces SNA. But ISO OSI, SNA and DEC NET (not to mention all the other manufacturers' interpretations of OSI) are different and can only co-exist up to a point. IBM's reluctance in backing OSI without reservation, remains the main obstacle to its universal acceptance.

Despite this, IBM's actions over the last two or three years have led some commentators to say that IBM's future will increasingly move toward open systems. At the annual UK Computer Mea-



Boost for business effectiveness: the Abbey National Building Society is working in partnership with Olivetti in the UK to use open system technology to increase its business efficiency.

Abbey National has placed an £18m order with Olivetti for the supply of new branch and administration office systems, based on the Olivetti PB (Personal Business) environment which provides a range of spe-

cialised software and hardware products. The order is for 3,900 PC systems with 750 LSX minicomputers for use throughout Abbey National's network of more than 200 branches.

Compliance and certification

Not an easy task

measurement Group meeting last month, Stelios Zographos, a consultant with BIS Applied Systems, suggested that IBM is more serious about OSI because its large customers have come to realise its importance for the development of their corporate networks.

IBM's leading role in the creation last month of the Open Software Foundation, another important aspect of open systems, suggests that it will continue to increase its 'commitment'.

Philip Manchester

COMPUTING standards are of very limited use without independent tests to prove that products conform to the rules.

The history of conformance testing (see details below) really started in the early 1960s, when the National Bureau of Standards in the US developed primitive tools to test one of the seven layers of the Open Systems Interconnection (OSI) international standard.

In 1982, the UK Department of Trade and Industry commissioned the National Computing Centre (NCC) to study the feasibility of providing independent

The non-invasive method works adequately because the OSI rules are intended only to ensure that information and instructions are not garbled when products from different manufacturers are linked in one network. They are not concerned with the inner workings of the computer.

Non-invasive testing involves treating the product as a black box and linking its interfaces to the test computer (which is usually a Sun workstation). The latter hurls data at it and monitors the speed and accuracy of its responses.

The costs of testing vary greatly according to the complexity of the OSI rules being applied. Companies can either pay to use a testing centre's facilities for a certain period or buy a test system for use in-house.

As an example, the NCC charges £10,000 for a year's subscription to test a single OSI layer. The price of an NCC test system for use in-house runs from £20,000 to £37,500.

Tests are now commercially available or under development for most OSI standards, though there are still some significant gaps in the range. But the most urgent need now is for an internationally accepted certification scheme, so that buyers will know which products have passed the conformance tests that are important for their particular network.

At present there are no formal certification procedures. After a product has been through a conformance test, the supplier receives a technical report giving details of the tests performed and the results achieved, but no certificate is issued. It is up to the manufacturer to show that the product conforms to OSI standards.

In the long run it is clearly unrealistic to expect anyone buying a product to plough through a detailed test report and conclude from that whether it follows the OSI rules. So the testing organisations are searching for a simple system, similar perhaps to the "kite mark" used by the British Standards Institute or the green circle of British Telecom, to show clearly and unambiguously that the product has passed the appropriate OSI tests.

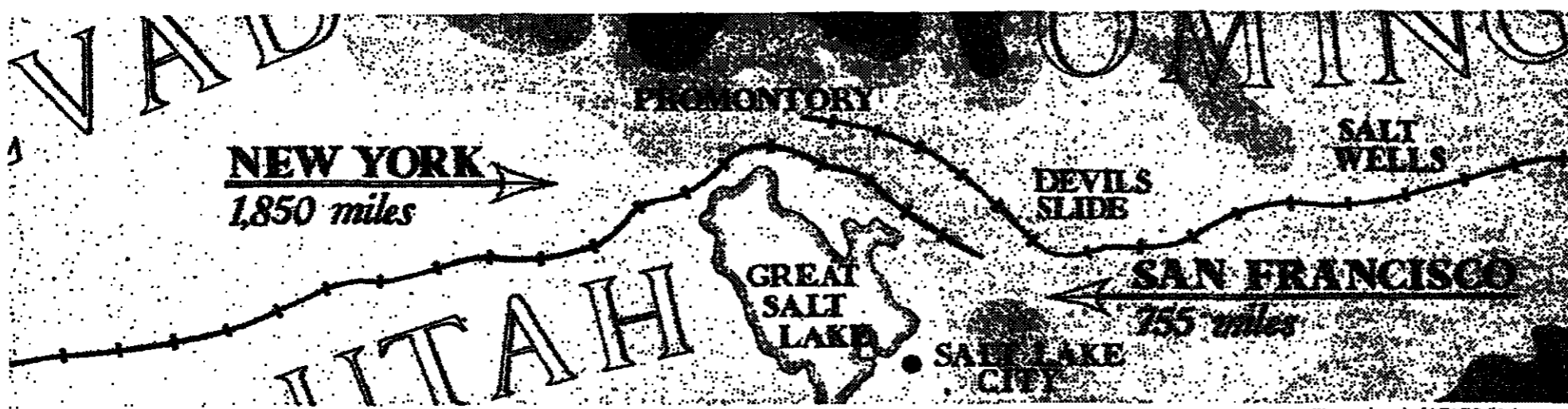
Most work on certification has been done by the Consortium for Open Systems in the US. COS investigated the idea of using a green or gold dot to show that products could interconnect or that they had been performance tested to a certain standard. But such admirable simplicity did not suit the complexities of OSI with its various "stacks" and "layers."

Even so, COS hopes to introduce an effective certification procedure before the end of 1988. At the same time, the European Community is actively promoting the European Certification of Information Technology (ECIT) scheme. This is designed to provide common criteria for accrediting testing laboratories and certifying products, and to allow each country to recognise the results of tests performed elsewhere.

Japan is also preparing to introduce a certification scheme, and eventually an international agreement is likely to emerge, dividing the world into three "spheres of influence" - European, American and Japanese - each with its own certifying authority.

Clive Coopers

In business, you don't get far without connections.



April 8th, 1869 should have been a great day in American railroad history. The eastbound Central Pacific line was due to join up with the westbound Union Pacific.

It didn't. They missed. And the two companies continued in stubborn, parallel absurdity until the President intervened and broke the deadlock.

The moral holds true today. In

business, connections are everything.

Our commitment to open systems and industry standards - such as MAP/

TOP compliance - means different

departments in your organisation can share their know-how. Rather than making tracks in splendid isolation.

And, should you ever need to change

direction, our UNIX* based systems allow

you to link easily with other vendors'

equipment.

Make the NCR connection today,

on 01-724 4050. Railroaded, you won't be.

Impressed, you will be.



Creating value

OPEN SYSTEMS 3

The 'MAP' and 'TOP' protocols

A make or break week

THIS WEEK could make or break the MAP and TOP communications protocols. MAP, devised by General Motors of the US, is the manufacturing automation protocol and TOP, its office equivalent, is the technical and office protocol championed by Boeing.

Boeing, GM and over 40 vendors gathered at the Enterprise Network Event (ENE) in Baltimore this week to demonstrate the first available MAP and TOP systems to conform, at least in theory, to open systems interconnect (OSI) international standards.

All of them, but especially the long-suffering vendors, share one hope: that the businessmen who go to ENE are so impressed by the demonstration that they decide to install MAP and TOP, instead of just talking about them.

MAP and TOP have been demonstrated before. The first demonstration was in Las Vegas in July, 1984. The next was in Detroit in November 1985. ENE is the final event in the series.

There was also one European demonstration, "Cinap" in Birmingham, in December 1986, though Cinap, organised by Britain's Department of Trade and Industry, was not part of the official demonstration series.

ENE is different because the versions of MAP and TOP seen at the earlier shows did not fully conform to OSI. How could they? Many of the necessary OSI standards were not fully defined. GM and its vendors filled the holes with 'show code' and other compromise patchwork.

This was not ideal - but at least business people would see what vendor independent communications could do. And they created sufficient interest to found thriving user groups in the US, Europe and Japan.

TOP and, more especially, MAP were born of frustration. GM found that nearly half the cost of any automation project arose from the inability of a plant from one vendor to talk to its neighbour from another vendor.

Each vendor of robots, programmable controllers, data collection systems and so on used a different networking system. If a programmable controller needed to exchange data with a robot, special interfacing software had to be written to allow this facility.

Despite such interfaces, GM also found that supervisors of a single part of a production process sometimes had to consult five different system suppliers' screens and type information from one screen to the keyboard of another.

For example, if one maker's computer is acting as a cell controller and reports a fault because of a worn part, the supervisor has to refer to a second maker's computer to find out if there is a replacement available and a third maker's system to see who is available to do the repair.

Eight years ago, GM, about to embark on a multi-billion dollar (and nearly disastrous) capital investment programme, decided

to press for a system which would enable all the machines in a factory to be plugged along a single cable, regardless of who made the machine.

It set up a task force in 1980 to find ways of standardising communications in its factory. MAP, which GM adopted in October 1982, was the result.

The US market for factory communications will grow by at least 180 per cent a year to \$2bn in 1992, say industry analysts

GM realised it had no hope of persuading vendors to create such a system just for GM. So GM wisely decided to base MAP on the emerging OSI standards being promoted by the International Standards Organisation (ISO). This would create a worldwide market for MAP products.

Later, Boeing came to the same conclusions about the interchange of technical office data such as drawings and other information. Both companies issued ultimatums to their suppliers: in effect, conform to these standards or we will take our business to companies who do.

By 1984, the vendors were falling over each other to boast of the ease with which their systems interconnected with everyone else's.

Whatever else may be said about MAP and TOP, these two initiatives mark the first occasion on which computer users began to dictate terms to even the mightiest of their suppliers. And the ramifications extend well beyond manufacturing. One reason why Baltimore was chosen for ENE is that it is close enough to attract the financial community, which is seen as an important future market for TOP.

But the road to Baltimore has been tough. The users have shown a lot of interest, but shelled out little cash. One reason may be a campaign by DEC's founder, Ken Olsen, against the physical connections MAP specifies.

MAP uses one method of allowing each node access to the network. TOP uses an older 'Ethernet' type technique which, as it happens, Olsen's company has been selling for years. The two are incompatible but work perfectly well in their different applications.

GM has compromised heavily on all sorts of other issues over the years. To accommodate European and process control interests it has agreed to a simpler, cheaper form of MAP which uses a single channel instead of a broadband cable. But GM, which argues that no node can be guaranteed access to an Ethernet system within a certain time, will not consider MAP on Ethernet.

Whoever is right, the argument has obscured the fact that the

functions defined elsewhere in the MAP and TOP specifications are much more important than the physical method of connection.

Another problem for potential MAP users has been its cost, though most of the press criticism has compared the cost per connection between MAP and

other systems without adding the undoubted benefits of being able to connect any piece of equipment to the network at once or those of improved information flows.

Another much-hyped MAP drawback is that "the product isn't here yet," though earlier MAP interfaces will be updatable to MAP version 3.0, the version launched in Baltimore this week, by changing two PROM chips.

A bigger headache for MAP/TOP's promoters has been the late delivery of conformance tests. If truly conforming MAP and TOP products are to be commercially available from ENE onwards, it follows that all the products shown at ENE have passed tests which confirm that those products meet the speci-

fication and work with each other.

In the case of MAP and TOP it probably takes eight or more such tests to define the systems fully. But to qualify for demonstration at ENE, products need to pass only four tests. The programme to develop the other tests ran aground.

The good news is that most of those involved in ENE say the four tests are enough to define about 90 per cent of what is needed. The other good news is that, thanks in part to GM and Boeing, IBM, DEC and the rest of the computer industry has gone so far down the OSI road that there is no turning back. The Japanese have been industriously boning up on MAP and TOP and will demonstrate and release products next year at the latest.

All manufacturing businesses will have to improve their data communications because the competition will force them to do so.

Dataquest says the US market for factory communications will grow at 180 per cent a year to \$2bn in 1992. Any chief executive who dismisses communications as unimportant or goes for a single vendor, non-OSI system, probably needs a long holiday.

John Dwyer Editor of FinTech 4, "Automated Factory" newsletter.

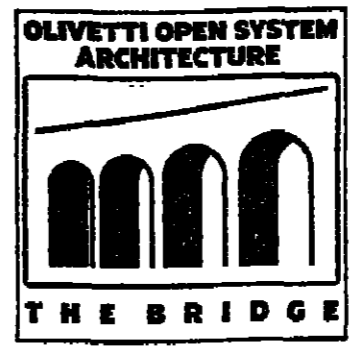


MAP - manufacturing automation protocol - was devised by General Motors of the US. Both MAP and TOP (its office equivalent) were born of frustration. GM found that nearly half the cost of any automation project arose from the inability of plant equipment from one vendor to talk to its neighbour from another vendor.



Unless you build a bridge you may have to rebuild your computer system.

Olivetti Open System Architecture is a straightforward, unrestricted approach to information management, based on individual functional needs and utilising industry standards at all levels (workstation, mini-computer, network and communications). Open System Architecture ensures that your system remains up to date, a bridge to future growth, thus maintaining the business advantages that technological innovation may provide. As you build your system, none of the additions you make will cause your existing equipment to become obsolete.



olivetti



TOP - the technical and office protocol, championed by Boeing. The Japanese are industriously boning up on both MAP and TOP.

Force for progress

Unix based on an IBM prototype. On the one hand, it is comforting that everybody agrees that Unix is the way ahead; on the other the computing world is now split in two. The question of what kind of standard man/machine interface and what standard architecture should be agreed for connection to local area networks are yet to be resolved.

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OPEN SYSTEMS 4

Adoption of standards by top companies

Evidence of commitment

TWENTY-ONE international computer companies, six international consultancies and software providers, plus four telecommunications companies, have pinned their colours to the mast of open systems to the extent of becoming full members of the European open system group, Eurosinet.

body is the Consultative Committee on International Telegraph and Telephone (CCITT), the international committee of telecommunications national authorities. The CCITT has taken the lead in forming message-handling standards.

at another demonstration of 'Compec 88', but the whole exhibition was cancelled. "This was a disappointment," says Derek Farmer, head of Eurosinet marketing and a strategic marketing manager at ICL in London.

completed by international bodies will be added to demonstrations as they are finalised. They will be in their stages of promulgation over the coming 12 months.

In the past, interest about open systems may have been stronger from smaller companies who could no longer afford to develop their own proprietary networking and had to rely on the slow development of international open systems. Now the picture is different, as the membership of Eurosinet shows.

The computer suppliers in the group include IBM UK, Digital Equipment, ICL, Honeywell Bull and Hewlett Packard. The telecommunications companies include British Telecom and AT&T Communications International.

As the Eurosinet members stage their demonstrations, they will add more detailed parts of open systems interconnection as they are defined by the various international bodies. OSI is a model for good communications, not a set of protocols or a practical way of transferring data, transactions or applications across previously incompatible networks and between previously incompatible computers.

The Unix community through X/Open was making good headway towards this objective, high on the list of priorities for users. It is yet to be seen if recent upheavals in the Unix community will put it in jeopardy or delay developments.

Leading European companies have now pinned their colours to the mast of open systems

was established in January 1986, with six vendors. The founding vendors realised that it was all very well showing their customers networking services and products that conformed to the OSI model, all running on their own kit, but it was hardly impressive.

The latest two standards to emerge which conform to open systems are for message-handling with X400 and file transfer. About 15 members of Eurosinet have implemented X400 messaging standards and had their products tested by the testing bodies.

The fourth standard under development which will have a large impact on open systems interconnection is Integrated Services Digital Network (ISDN). ISDN aims to unite voice and data traffic over the same circuits and create enough space for images. The idea behind it is that customers will get one cable into their locations over which all their communications traffic will be passed.



IN PREPARATION for the European Pavilion at the Enterprise Networking Event (ENE '88) in Baltimore (June 5-9), the centre of activity has been the PERA site (above) in Milton Mowbray. The main aim of ENE '88 is to show how business communities, from all sectors of industry, can capitalise on the latest networking technologies and OSI standards.

The impact of public and private standards groups

Unstoppable momentum

THE NOTION of open systems for the computer industry has attracted the interest of users for at least three decades. But it is only since the late 1970s that the issue has been tackled systematically, and a genuinely strong momentum to the standards drive developed just five or six years ago.

Like most nascent industries, computing grew up in a relatively free-for-all environment in which manufacturers effectively set their own standards.

Equipment, Ericsson, Hewlett-Packard, ICL, NCR, Nixdorf, Olivetti, Philips, Siemens, Sun Microsystems and Unisys. X/Open's growth has been based on two key decisions. First is its emphasis on de facto standards. To speed up the development of open systems, it argues, it makes sense to establish a consensus around proprietary products that have responded effectively to a market need.

Established by a group of US companies a year after X/Open, COS grew out of computer manufacturers' needs to test their compliance with international standards, and is now developing a series of programmes that will test products against the rules on open systems interconnection.

From the user point of view this has led to two main problems. On the one hand, it has become a difficult and expensive task to make computers produced by different manufacturers communicate with each other, on the other, applications software developed for the machines of one producer would not work on the equipment of another.



standards that fit what they have to offer, rather than developing genuinely open architectures, determined by customer requirements," he says.

Although the group's two initial test programmes were delivered a year late, it has attracted 84 members, and is expecting to announce a further three programmes this year. A similar initiative under the SPAG group has been launched in Western Europe.

base its standards-setting programme. Applications software rests on the platform provided by a computer's operating system. Indeed, the reason that most applications programmes are not transferable between the machines of different manufacturers is that they were written for use with a specific operating system.

To avoid this problem, X/Open decided to standardise on Unix, an operating system invented by AT&T, the US telecommunications group, but licensed so freely that it was not regarded as proprietary.

The significance of the Unix decision is clearly evident today, following the rows that have broken out over the future development of this operating system between two rival camps of US-based computer companies. This battle in turn owes its inspiration to the support Unix has attracted in the last four years as users have responded to the X/Open initiative.

more this week: from left to right - Mr Ron Armstrong, PERA's director general; Mr Malcolm Millington, manager of manufacturing integration; and Mr Ralph Purdue, technical manager.

The IBM standard in the woodpile

Two major strategies

THE TRADITIONAL and deeply-held view is that IBM is opposed to open systems, that has its own networking standard in Systems Network Architecture (SNA) and that IBM is out of step with a growing groundswell of international vendor and user opinion.

computer as their host should be operated. Over time, protocols to link terminals and other devices into the mainframe were added. The first was Synchronous Data Link Control (SDLC). Software in the mainframe in communications controllers close to the mainframe and in terminals was changed to conform to SNA.

while keeping most of the essential features of both. SNA was built as a layered architecture. But its five layers are defined differently from, and have different applications to, the seven layers of OSI.

within OSI as they were formally adopted by the relevant standards authorities. Packet Switching, for example, is an alternative to the circuit switching protocol of IBM's SDLC.

A closer look at its statements and its products, however, present a different picture. IBM is one of the most enthusiastic supporters of open systems, it offers many more products conforming to the open systems interconnection (OSI) seven-layer model than almost any other vendor - and some of the most enthusiastic OSI supporters on international bodies come from IBM.

SNA itself has, over a period, changed its character. Early on, it was criticised for being too dependent on a mainframe computer at the centre. Then other computers could be added, but only under the control of a central one. Finally, each computer in the network was equal to all others.

Such work has largely been abandoned. It is now clear that SNA and OSI are not so much conflicting approaches as that they tackle the problems of networking at different levels.

IBM has amended its products as X25 has evolved into the 1980 standard formally adopted by the whole CCITT.

OSI 'coming together'

After a decade of development, this is the year in which all the threads come together for OSI in relation to customers, products and test services, comments Dr Robin John, (right), senior manager for communications software development, Concurrent Computer Corporation and convenor of the ISO working group for specific application services - SC21/WG5.

complete OSI product sets. It is worth noting that in both Europe and the US, there is legal backing for government procurement to be based on the use of OSI standards.



Indeed, IBM was one of the first to implement the standards VNet has far lower security than SNA and less elaborate methods of handling the unforeseen crashing of computers, terminals or communication lines in the network. It is therefore well suited to the academic and technical world where security is less problematic and users are more tolerant of hardware and software problems.

PERA LEADERS AT BALTIMORE NETWORKING EVENT



THREE of the leading figures of PERA (the Production Engineering and Research Association of Great Britain, based at Milton Mowbray, Leicestershire), who are at the European Pavilion of the Enterprise Networking Event in Baltimore this week: from left to right - Mr Ron Armstrong, PERA's director general; Mr Malcolm Millington, manager of manufacturing integration; and Mr Ralph Purdue, technical manager.

Richard Sharpe

هكذا صحت العمل

WORLD STOCK MARKETS

Table with columns for Australia, France, Italy, Sweden, and other regions, listing stock prices and market movements.

CANADA

Table listing Canadian stock market data, including Toronto closing prices and various stock indices.

Table listing Japanese stock market data, including various stock prices and market indices.

INDICES

Table showing various stock indices for New York, Canada, and other markets, including Dow Jones and S&P 500.

Table listing European stock market data, including various stock prices and market indices.

OVER-THE-COUNTER

Table listing over-the-counter stock market data, including various stock prices and market movements.

Advertisement for 'Have your F.T. hand delivered in Belgium' by Financial Times, featuring a graphic of a hand holding a paper.

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

44

Closing Prices June 3

Main table containing stock prices, organized into columns with headers for stock names, prices, and other market data. Includes sub-sections for '12 Month High', 'Low', and 'Close' for various stocks.

Continued on Page 45

NYSE COMPOSITE PRICES

Table of NYSE Composite Prices listing various stocks with columns for High, Low, and Close prices.

AMEX COMPOSITE PRICES

Table of AMEX Composite Prices listing various stocks with columns for High, Low, and Close prices.

OVER-THE-COUNTER

Table of Over-the-Counter market prices listing various stocks with columns for High, Low, and Close prices.

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CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGES

Pound adjusts to a stronger dollar and D-Mark

BY COLIN MILLHAM

THERE WAS a certain temptation to say I told you so among some of the pundits in the City last week. Barclays de Zoete Wedd even split out these words reading down the first letter of each line on one of their Reuter Monitor pages.

This subtle form of self-congratulation was not lost on everyone in the market, although according to BZW the general change of sentiment, out of sterling and into the dollar, was not noticed until it was too late by most traders.

Perhaps the reason it was missed was that the market was too blinkered in watching sterling's value against the D-Mark and failed to see that the dollar's steady downward slide had come to an end.

A strong test of whether the dollar has really turned the corner may come on June 14, with publication of the US trade figures for April.

These are widely expected to show a deterioration from the \$8.75bn deficit in March. Sterling was very volatile last week, moving through a 10 pence range, from DM3.1950 in Frankfurt on Monday when London was closed for the bank holiday - to DM3.0950 on Thursday, shortly before the Bank of England signalled a rise in bank base rates.

But according to one school of thought, which includes BZW, the pound's reversal was largely the result of the return to favour of the dollar.

BZW has focused its attention on the level of US savings, and its effect on funding the very large budget deficit.

According to BZW, savings as a ratio to income in the third quarter of 1987 was at a post war record low of 2.8 p.c., making the US heavily dependent on foreign investment to fund the deficit.

£ IN NEW YORK

Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 12 months.

STERLING INDEX

Table with columns: June 3, June 2, Previous Close. Rows for 8.50, 9.00, 9.50, 10.00, 10.50, 11.00, 11.50, 12.00, 12.50, 13.00, 13.50, 14.00.

CURRENCY RATES

Table with columns: June 3, Bank, Spot, 3 months, 12 months. Rows for US Dollar, Canadian Dollar, Australian Dollar, etc.

CURRENCY MOVEMENTS

Table with columns: June 3, Bank, Spot, 3 months, 12 months. Rows for Sterling, US Dollar, etc.

OTHER CURRENCIES

Table with columns: June 3, Bank, Spot, 3 months, 12 months. Rows for Argentina, Brazil, Hong Kong, etc.

FORWARD RATES AGAINST STERLING

Table with columns: Spot, 1 month, 3 months, 6 months, 12 months. Rows for US Dollar, French Fr, etc.

MONEY MARKETS

Base rates look set to move up again

STERLING'S DECLINE last week brought about a welcome opportunity for the Bank of England to signal a rise in UK bank base rates.

Last week traders unwound long positions in the pound and short positions in the D-Mark, leading to a realignment of the two currencies.

There appears to have been a fundamental change in sentiment, brought about by a recovery in the dollar and the D-Mark, which has left the pound looking vulnerable to a move of speculative money out of London.

Mr Nigel Richardson, at Warburg Securities, said that during the last week traders unwound long positions in the pound and short positions in the D-Mark, leading to a realignment of the two currencies.

Interest rates to direct sterling's course. Intervention is not expected on a large scale, but may be used to smooth the pound's decline, and insure there is no threat of sterling going into free fall.

Interest rates are likely to move higher. Three-month sterling interbank discounts were another rise of 1/4 p.c. in base rates at Friday's close, and at one time during the day pointed towards an increase of 1 p.c.

Mr Richardson said he does not believe the authorities will go for a rise of 1 p.c. at a time in rates, and that another 1/4 p.c. is likely to be the next move.

Mr MacKinnon, at Nomura, agrees that the authorities will welcome the chance to raise interest rates, and that the next upward adjustment is likely to be another 1/4 p.c. to 8/4 p.c.

FT LONDON INTERBANK FIXING

Table with columns: 11.00 a.m. June 3, 3 months US dollars, 6 months US Dollars. Rows for 1M, 3M, 6M.

BANK OF ENGLAND TREASURY BILL TENDER

Table with columns: June 3, June 2, Previous Close. Rows for 110m, 110m, 110m.

WEEKLY CHANGE IN INTEREST RATES

Table with columns: June 3, Change, June 2, Change. Rows for LONDON, NEW YORK, BRUSSELS, AMSTERDAM.

MONEY RATES

NEW YORK

Table with columns: One month, Three months, Six months, 12 months. Rows for Prime rate, 90 day, etc.

LONDON MONEY RATES

Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 6 months, 12 months.

MONEY RATES

NEW YORK

Table with columns: One month, Three months, Six months, 12 months. Rows for Prime rate, 90 day, etc.

LONDON MONEY RATES

Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 6 months, 12 months.

MONEY RATES

NEW YORK

Table with columns: One month, Three months, Six months, 12 months. Rows for Prime rate, 90 day, etc.

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Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 6 months, 12 months.

MONEY RATES

NEW YORK

Table with columns: One month, Three months, Six months, 12 months. Rows for Prime rate, 90 day, etc.

LONDON MONEY RATES

Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 6 months, 12 months.

MONEY RATES

NEW YORK

Table with columns: One month, Three months, Six months, 12 months. Rows for Prime rate, 90 day, etc.

LONDON MONEY RATES

Table with columns: June 3, June 2, Previous Close. Rows for 1 month, 3 months, 6 months, 12 months.

WORLD RECENT ISSUES

Table with columns: Issue, Amount, Latest, 1988, Stock, Price, etc. Rows for various companies like Anglo American, etc.

FIXED INTEREST STOCKS

Table with columns: Issue, Amount, Latest, 1988, Stock, Price, etc. Rows for various bonds and stocks.

"RIGHTS" OFFERS

Table with columns: Issue, Amount, Latest, 1988, Stock, Price, etc. Rows for various rights offers.

A financial institution is offering to provide a loan of up to £100,000 to help finance the purchase of a property.

EUROPEAN OPTIONS EXCHANGE

Table with columns: Series, Call, Put, etc. Rows for various European options.

BASE LENDING RATES

Table with columns: Bank, Rate, etc. Rows for various banks and their base lending rates.

FT - ACTUARIES WORLD INDICES

Table with columns: National and Regional Markets, Friday June 2 1988, Thursday June 2 1988, Dollar Index.

Jointly compiled by the Financial Times, Goldman, Sachs & Co., and Wood Mackenzie & Co. Ltd., in conjunction with the Institute of Actuaries and the Faculty of Actuaries

Table with columns: National and Regional Markets, Friday June 2 1988, Thursday June 2 1988, Dollar Index. Rows for various countries and indices.

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